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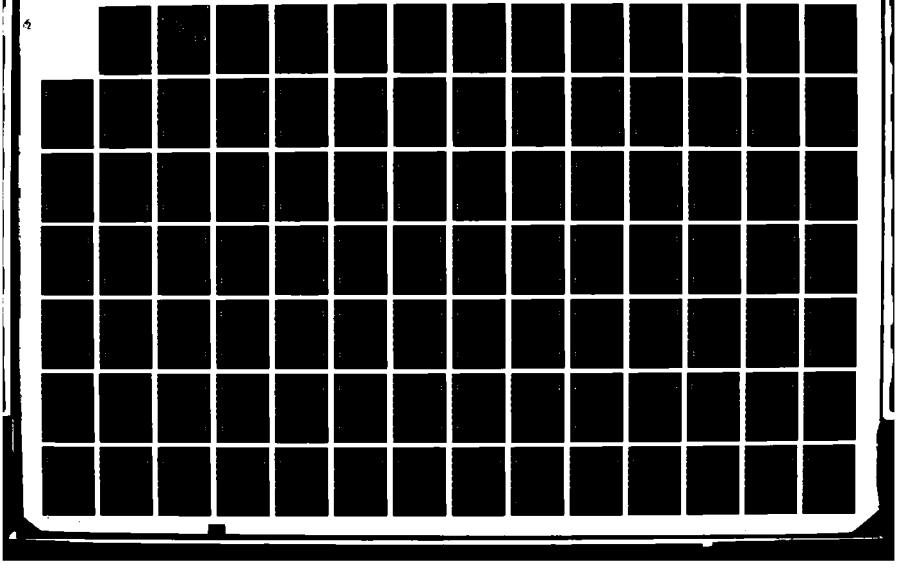

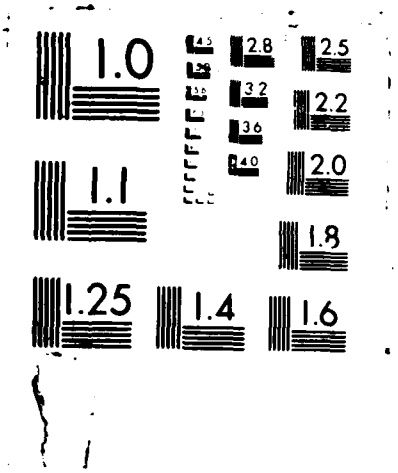
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DEPARTMENT OF DEFENSE
MARCH 1978

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The Military Manpower Training Report of the Secretary of Defense is submitted to the Congress annually. It specifically supports the Department of Defense request for authorization of average military student training loads for each component, active and reserve, of each Service. It recommends the average student load for each category of individual training and education and includes justification for, and explanation of, the average student loads recommended. Required for fiscal year 1979.

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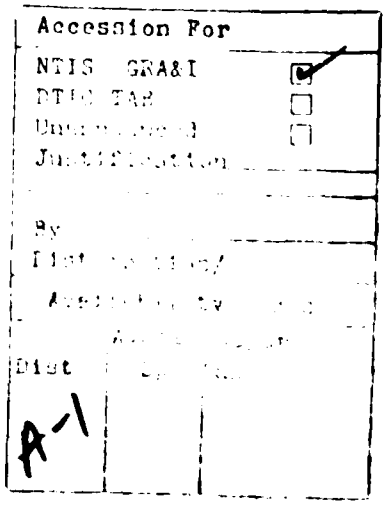
MILITARY MANPOWER TRAINING REPORT FOR FY 1979

DEPARTMENT OF DEFENSE
March 1978

Prepared by

Office of the Assistant Secretary of Defense
(Manpower, Reserve Affairs and Logistics)



EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Military Manpower Training Report of the Secretary of Defense is submitted to the Congress in accordance with 10 U.S.C. 138(d)(2), which states:

> The Secretary of Defense shall submit to Congress a written report, not later than March 1 of each fiscal year, recommending the average student load for each category of training for each component of the armed forces for the next three fiscal years, and shall include in that report justification for, and explanation of, the average student loads recommended.

In compliance with the law, this report presents the recommended military student training loads for the Department of Defense for Fiscal Years 1979 through 1981. The report specifically supports the Department of Defense request for authorization of average military student training loads for each component, active and reserve, of each Service for Fiscal Year 1979 and Fiscal Year 1980. Requested training loads for these two periods are shown in the following table.

Requested Training Loads, FY 1979 and FY 1980

	FY 1979	FY 1980
Active Components		
Army	67,843	69,616
Navy	57,996	60,594
Marine Corps	21,324	19,614
Air Force	44,410	45,100
Reserve Components		
Army National Guard	11,793	14,102
Army Reserve	5,959	6,816
Naval Reserve	991	983
Marine Corps Reserve	3,074	2,947
Air National Guard	2,471	2,444
Air Force Reserve	1,184	1,180

Total requested training loads are as follows:

Total Requested Training Loads, FY 1979 and FY 1980

	FY 1979	FY 1980
Active Components	191,573	194,924
Reserve Components	25,472	28,472
DoD Total	217,045	223,396

The requested loads are consistent with the President's Budget for FY 1979 and the Department of Defense request for authorization of military manpower strengths, active and reserve.

Definitions and Explanation of Training Loads

This report discusses the training and education of individuals within the Department of Defense, as opposed to the training of operational mission units or crews. Individual training and education, for purposes of this report, is divided into six categories:

- Recruit Training, given to all enlisted entrants to the Services who have not had previous military service.

- One-Station Unit Training, an Army program which combines Recruit Training and training in certain skills into a single continuous course.

- Officer Acquisition Training, which leads to a commission in one of the Services.

- Specialized Skill Training, needed to prepare military personnel for specific jobs in the Military Services.

- Flight Training, primarily for prospective pilots and navigators before they receive an initial operational assignment.

- Professional Development Education, relating to the advanced professional duties of military personnel or to advanced academic disciplines to meet Service requirements.

"Training loads" are the average number of students and trainees participating in formal individual training and education courses during the fiscal year. For a full fiscal year, training loads are the equivalent of student/trainee manyears for these participants, including both those in temporary duty and permanent change of station status.

The requirement for training in a base-line force is derived from the need to replace losses in each skill required in the military force structure. Losses, through separations, promotions and other causes, are projected at various points in the future and compared to the projected inventory of trained personnel. The deficit between the requirement in each skill and the inventory becomes a demand for an output of trained personnel. A phased input of students to the training establishment is then scheduled so that trained personnel, in each skill and skill level, are available at the proper time to replace the losses in those skills. The resulting workload placed on the training establishment is the basis of the training loads addressed in this report.

The training load for each component is the measure of the amount of training required for the members of that component, although some of the training will be done by other Services, in DoD schools, or in some cases by institutions outside the Department of Defense. The training of members of the Reserve Components included in the report is the formal school training provided by the active training establishment to individual members of the Reserve Components while they are on active duty for training; this is primarily training provided to non-prior service personnel entering the Reserve Components.

An Overview of Training Loads

During FY 1979 and FY 1980, total requested DoD training loads will range between approximately 217,000 and 223,000. About 87 to 88 percent of these annual loads is composed of training for members of the active forces; the remaining 12 to 13 percent of these loads is training for members of the Reserve Components, while on active duty, conducted by the active training establishment.

The following table displays the percentage of total active force loads and the percentage of total Reserve Component loads attributable to each of the major categories of training in FY 1979.

Percent Distribution of Training Loads, FY 1979

Training Category	Active Forces	Reserve Components
Recruit Training	21%	29%
One-Station Unit Training	9%	23%
Officer Acquisition Training	8%	2%
Specialized Skill Training	54%	44%
Flight Training	3%	1%
Professional Development Education	5%	1%
Total	100%	100%

It will be noted that the preponderant categories of training, in terms of training loads, are Recruit Training and Specialized Skill Training, both of which, along with One-Station Unit Training, are strongly influenced by the number of enlisted non-prior service accessions to the force. Other types of training -- all of Officer Acquisition Training, for example -- are also driven by the number of new accessions to the force. The following table divides the requested training loads for FY 1979 into two parts: training which is primarily accession-related, and is conducted for the purpose of turning a civilian into a qualified service member with a usable military skill; and other training, which, for the most part, is conducted for the purpose of preparing members in later stages of their military careers for more demanding duties.

Accession-Related Training and Other Training Loads, FY 1979
(Thousands)

	Active Forces	Reserve Components	Total Active & Reserve
Accession-Related Loads			
Recruit	40.5	7.3	47.7
One-Station Unit Training	16.9	5.7	22.6
Officer Acquisition	16.1	0.5	16.6
Initial Skill (Officer & Enlisted) a/	66.0	9.2	75.2
Undergraduate Flight b/	4.3	0.2	4.5
Subtotal	143.7	22.9	166.7
Other Loads			
Other Specialized Skill	36.9	2.2	39.1
Other Flight	0.6	0.1	0.7
Professional Development	10.3	0.3	10.6
Subtotal	47.8	2.5	50.4
Accession-Related Loads as Percent of Total Loads	75%	90%	77%

Note: Numbers may not add due to rounding.

a/ In some cases, includes some training for prior-service personnel or personnel who receive the training at a later stage.

b/ Includes Flight Familiarization Training.

As the table shows, training primarily related to new accessions amounts to about 75 percent of all training programmed for the active forces in FY 1979; only about 25 percent is for subsequent training. The comparable proportions for the Reserve Components are about 90 and 10 percent. The concentration on accession-related training demonstrates the priority the Services place on training intended to produce new Service members who are motivated, amenable to discipline, and capable of productive service as members of military organizations.

Taking a longer view, the following table compares actual training loads in FY 1973 and FY 1976 with those programmed for FY 1978 and FY 1979.

Active and Reserve Training Load Trends by Service,
FY 1973 - 79
(Thousands)

	FY 73	FY 76	FY 78	FY 79	Percent Change FY73-79	Percent Change FY78-79
Active Forces						
Army	109	78	69	68	-38	-2
Navy	77	65	61	58	-24	-5
Marine Corps	30	25	22	21	-28	-4
Air Force	59	48	46	44	-24	-3
Total Active	274	216	198	192	-30	-3
Reserve Components	25	22	30	25	+3	-16
Total DoD	299	238	228	217	-27	-5

Note: Calculations are affected by rounding. (e.g. unrounded values were used to calculate Reserve Component percent change for FY 1973 - FY 1979).

As the table shows, active force training loads decrease by 30 percent from FY 1973 to FY 1979; the trend toward lower loads is also reflected in reductions from FY 1978 to FY 1979 in each Service.

The following table compares training loads by the major categories of training. For purposes of comparability Army One-Station Unit Training, which was not in use in FY 1973, is allocated to Recruit and Specialized Skill Training in the table.

Active and Reserve Training Load Trends by Training Category
FY 1973 - 79
(Thousands)

	FY 73	FY 76	FY 78	FY 79	Percent Change FY73-79	Percent Change FY78-79
Recruit	94	73	66	61	-36	-8
Officer Acquisition	20	18	17	17	-16	-1
Specialized Skill	157	130	131	124	-21	-5
Flight	9	5	5	5	-41	+13
Professional Development	19	12	11	11	-43	-2
Total	299	238	228	217	-27	-5

Note: Calculations are affected by rounding.

Overall, training loads decrease by over 80,000 from FY 1973 to FY 1979. The most notable proportional reductions since FY 1973 are in Flight Training and Professional Development Education. These two categories of training, while small in load, are high in cost per unit of load. Flight training loads increase somewhat in FY 1979, as overages of aviators from the Vietnam years decline. The numerically large reductions in Recruit and Specialized Skill Training, which are continued into FY 1979, are the cumulative result of decreased accessions, shortening of training time in some courses, and the increasing use of One-Station Unit Training by the Army.

Training loads for each of the major categories of training are discussed in detail in Chapters III through VII.

Funding for Individual Training

Funding required to support the training in the training load request for FY 1979 totals approximately $5.9 billion, of which about 40 percent is made up of pay and allowances for the students undergoing training. The remainder includes pay and allowances of military and civilian personnel in support of training, operations and maintenance costs, and training-related procurement and construction funded in FY 1979. The following table displays total training funding for each Service.

Aggregate Funding of Individual Training
by Service, FY 1979
($ Millions)

Army	Navy	Marine Corps	Air Force	DoD
$2,326	$1,641	$ 419	$1,547	$5,933

The same funding is shown below attributed to each of the major categories of training.

Aggregate Funding of Individual Training
by Training Category, FY 1979
($ Millions)

Recruit Training	712
Army One-Station Unit Training	312
Officer Acquisition Training	424
Specialized Skill Training	2,982
Flight Training	1,092
Professional Development Education	410
Total	5,933

Note: Numbers may not add due to rounding.

Manpower for Individual Training

Individual training requires manpower to conduct and support instruction, manage military schools and training centers, maintain training bases and provide support to students, military staff members and their dependents. Chapter IX of this report provides an analysis of military and civilian manpower attributable to the individual training function. Manpower in support of individual training for FY 1979, by the general functions it performs, is shown in the following table.

DoD Manpower in Support of Individual Training, FY 1979
(End Strength, Thousands)

	Military	Civilian	Total
Training and Direct Training Support a/	82.8	17.2	100.0
Base Operating Support	23.0	25.2	48.2
Major Training Headquarters	1.4	1.3	2.7
Total	107.2	43.7	150.9

a/ Includes instructors, instructional support, school/training center administration, student supervision, part of student support.

Manpower in each of these functional areas is being considerably decreased from the levels which prevailed in previous years. The extent of this reduction is shown in the following table.

Trends in Manpower in Support of Training, FY 1975-79
(Combined Military and Civilian End Strengths, Thousands)

					Percent Change	
	FY 75	FY 77	FY 78	FY 79	FY 75-79	FY 78-79
Training and Direct Training Support	128.4	109.3	107.1	100.0	-22	- 7
Base Operating Support	74.5	55.7	52.3	48.2	-35	- 8
Major Training Headquarters	3.3	2.6	2.6	2.7	-18	+ 4
Total	206.2	167.6	162.0	150.9	-27	- 7

Over the same period, training workloads -- that is, all students trained or supported by this manpower, including, in addition to DoD military students, foreign students and students from other U.S. departments and agencies -- have decreased by a smaller percentage, as the following table shows.

Trends in Training Workloads, FY 1975-79
(Thousands)

FY 1975	FY 1977	FY 1979	Percent Changes FY 75-79	Percent Changes FY 77-79
250.6	245.0	227.9	- 9	- 7

These significant decreases in manpower in support of training, when combined with the proportionately smaller decrease in training workloads, imply a notable increase in productivity in the Service training establishments.

Other Training Improvements

In addition to reducing levels of manpower in support of training, efforts are continuing to make individual training more efficient and effective.

Reducing the amount of formal training provided, where this can be done with an acceptable effect on the quality of training and on force readiness, is equally as important as reducing training staff manpower, since military students must be paid and supported. This year we are proposing to reduce the length of Navy Recruit Training from eight to 6.7 weeks in addition to the one-week reduction Navy adopted last year. The Marine Corps course will be reduced from eleven to nine weeks, and the Army will drop two days of in-processing time for its recruits.

The Army will save additional training time by expanding the use of One-Station Unit Training (OSUT) in certain high-density skills. By combining Recruit and Initial Skill Training into single condensed courses, the Army will save three to four weeks in training infantrymen. The Army is also reducing student entrants and course lengths in some Skill Progression and Functional Training courses. The Marine Corps and Air Force are both shortening the average length of their Initial Skill Training courses; the Marine Corps is also reducing student input to these courses.

In one of the most important applications of modern technology to training, the Services are continuing to save flying time and costs and improve training quality through the procurement and use of flight simulators.

The Department of Defense is again proposing the consolidation of all Defense undergraduate helicopter pilot training into a single program. The planned consolidated program will provide training which will meet the requirements of each of the Services while saving substantial funds and military and civilian manpower.

The Necessity for Good Training

The objective of individual training is to provide the operational forces with personnel adequately trained to assume jobs in military units. Without effective training and education programs, the operational forces would be manned with personnel who are less than fully qualified for their jobs. Since the nation cannot predict when or where war may break out or count on an extended period for mobilization, we must have effective individual training to assure that our operational units are capable of carrying out national security missions in peace or war.

MILITARY MANPOWER TRAINING REPORT FOR FY 1979

DEPARTMENT OF DEFENSE
March 1978

Prepared by

Office of the Assistant Secretary of Defense
(Manpower, Reserve Affairs and Logistics)

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MILITARY MANPOWER TRAINING

REPORT FOR FY 1979

Military Manpower Training Report for FY 1979

I

INTRODUCTION

Training Requirements and Manpower Requirements

Requirements for training and education of military personnel are derived ultimately from basic national security objectives. This Report, the Report of the Secretary of Defense to the Congress on the FY 1979 Budget, and the Defense Manpower Requirements Report, describe the progression from national security objectives to training load requirements. The Report of the Secretary of Defense explains the relationship between the threat and the forces designed to cope with the threat. The Manpower Requirements Report relates these forces to the requirement for trained manpower to man the forces. The Military Manpower Training Report takes as a starting point the requirement for trained military manpower described in the Manpower Requirements Report. It then describes how these requirements relate to the demand placed on the military training establishment to supply this trained manpower, and how this demand leads to the DoD request for military student training load authorizations for each component of the Military Services. The Manpower Requirements Report and this Report are mutually supportive; however, the data in the two reports are not interchangeable or directly comparable. The principal reason for this difference is that the main focus of the Manpower Requirements Report is upon requested strength on the last day of fiscal years (that is, end strength), whereas the main focus of this Military Manpower Training Report is upon requested student loads, a concept more comparable to average strength, or man-years, than to end strength.

Definition of "Individual Training and Education"

This report addresses the "individual training and education" activities of the Department of Defense. These involve the training of individual military members in formal courses conducted by organizations whose predominant mission is training; this training is to be differentiated from training activities conducted by operational units incidental to their primary combat, combat support, or combat service support missions. "Force support training," the training of organized crews and units for the performance of specific missions, generally is not included in the training loads discussed in this report, but is discussed in the Manpower Requirements Report. In certain categories of training, on-the-job training (OJT) in units supplements or substitutes to some extent for all or part of formal course training requirements; OJT is also not included in the training loads discussed in this Report.

The purpose of individual training and education is to give the individual Service member the skills and knowledge that will qualify him or her to perform effectively in subsequent assignments as a member of

an operational military organization. "Individual training and education includes all formal military and technical training and professional education conducted under centralized control, generally under the supervision of a Service training command or similar organization. The trainees and students undergoing the training or education addressed in the report include the following categories of personnel:

1. Active Force: officers, enlisted personnel, and Service Academy cadets and midshipmen.

2. Reserve Components: officers and enlisted members on active duty for training in formal school courses.

Training of some civilian students, prior to their entry into the Services, in such programs as ROTC, is also discussed in the report. However, training loads are properly requested only for training and education of personnel received while they are in active military status.

In general, the training discussed in this report is conducted under Major Defense Program VIII, "Training, Medical and Other General Personnel Activities," as presented in the Defense budget. Exceptions to these general rules are pointed out, where appropriate, in the body of the report.

Personnel undergoing individual training and education are classified, for manpower accounting purposes, as either trainees, students, or cadets, unless they are undergoing training while on temporary duty or temporary additional duty from their unit of assignment, or unless they are being trained while en route to new stations as transients. The term "trainees" is generally used for all enlisted personnel in Recruit Training and Initial Skill Training. "Cadets" (or "midshipmen" in the case of the Naval Academy) are members being educated at one of the Service Academies. All others receiving individual training and education are identified as "students". The distinction is not important for the purposes of this report, and the term "student" will be used where appropriate to describe members of all three classifications as well as temporary duty and transient personnel being trained.

The term "training" generally refers to instruction in military subjects either at a basic level, as in Recruit Training, or in a military or job-related technical specialty, such as pilot training or training in radar repair. "Education" generally refers to study either in more advanced subjects or in military subjects which apply to an entire Service or to the broad mission of national security, as, for example, the curriculum at the National War College. The term "training" will be used in this Report to refer to individual training and education as a whole.

FY 1979 Training Report and the FY 1979 Budget

It is important to emphasize that this Report, while consistent with the Department of Defense Budget for FY 1979, differs in structure from the budget justification in two major respects. Budget justifications are focused on explaining how, by whom, and why money is to be spent; budgets for training and their justifications, therefore, are prepared by the Service which conducts the training programs and must obtain funds to train personnel from other Services in addition to its own. By contrast, this Report details and emphasizes the training loads of the components of the parent Service whose members are undergoing the training, and deals in less detail with resources and funds required by the Service which conducts the training. For example, Navy personnel being trained by the Air Force are treated in this Report as part of the Navy military student training load, since they are being trained to fill Navy requirements. However, in budget documents, funds to conduct training for these students, who are a part of the Air Force training workload, are included in Air Force appropriation requests.

Second, this Report, like the Training Reports since FY 1975, uses standardized categories to describe the Service training and education programs. Budget justifications in the past have used Service terms and categories for budget presentations. The major variations still remaining between Training Report and budget categories are pointed out in the following sections. As a result of the 1977 restructuring of the training-related portions of the Five-Year Defense Program, the variations found in previous years have been largely eliminated.

Definitions of Major Training Categories

The portion of this Report which discusses training loads in detail is organized into five chapters (Chapters III through VII), each of which addresses one of the major categories of training. These major categories are briefly defined below. Each chapter will more fully describe the training category and its sub-categories, the requested training loads, and the training methodology.

Recruit Training includes the basic introductory physical conditioning, military, and indoctrination training given to all new enlisted entrants in each of the Services. One-Station Unit Training (OSUT) is an Army training program which meets the training objectives of both Recruit and Specialized Skill Training in certain skills through a single course for new Service entrants which is conducted by a single training unit. Since it includes elements of two categories of training, it is treated separately in this Report.

Officer Acquisition Training, sometimes called pre-commissioning training, includes all types of education and training leading to a commission in one of the Services, such as the programs of the Service Academies and officer candidate schools. Students not in active military status, such as Reserve Officer Training Corps students, are excluded from requested loads in this Report.

Specialized Skill Training provides officers and enlisted personnel with new or higher levels of skill in military specialties to match specific job requirements.

This category includes Army Advanced Individual Training and Navy Apprenticeship Training. Certain flight-related training, such as training of air traffic controllers and some aircraft mechanics, and survival training in the Air Force, is reported under Specialized Skill Training. None of the officer acquisition programs are included in Specialized Skill Training.

Flight Training provides the individual flying skills needed by pilots, navigators, and naval flight officers to permit them to function effectively upon their assignment to operational mission units. The Service undergraduate flight training programs culminate in an officer, or an Army warrant officer, receiving "wings" and being categorized as a "designated" or "rated" officer.

The undergraduate programs do not include the major formal advanced flight training programs, which have not been considered individual training by some Military Services. Certain of the training conducted by Service advanced flight training organizations is not individual training and is therefore beyond the scope of this Report.

Professional Development Education includes educational courses conducted at the higher-level Service schools or at civilian institutions to broaden the outlook and knowledge of senior military personnel or to impart knowledge in advanced academic disciplines to meet Service requirements. Training of this type is required to prepare individuals for progressively more demanding assignments, particularly for higher command and staff positions. Programs include undergraduate and graduate education and other courses not leading to a degree.

Enlisted leadership training for senior non-commissioned officers is included in Professional Development Education rather than in Specialized Skill Training to recognize its broad professional content. However, Navy leadership training, which is given to all grades of petty officers, is included in Specialized Skill Training, as is the rest of NCO training for more junior personnel conducted by the other Services.

Determining Training Requirements and Training Load

The amount and type of training to be conducted in the Department of Defense is the product of a series of calculations which is described in Appendix B to this Report.

In brief, the process begins with the determination of the requirement for military personnel with specific skills to fill positions in the approved or projected force. The requirement for trained manpower must then be measured against the available inventory of trained personnel projected at various points in the future. This comparison, made for each military skill and skill level, establishes the need for the training of personnel, on a phased basis, to fill current and projected skill shortages. The requirement for the training of personnel on a schedule calculated to maintain the skill inventory becomes the workload of the Service training establishments. It is measured in terms of the average military training student load, or "training load". The training load for a given period is not only a measure of the amount of training to be accomplished; but, adjusted to take account of the Service conducting the training, it becomes a "workload" and thus it is also a basis for establishing the requirement for resources (manpower, funds, materiel and facilities) needed to support the training to be conducted by a Service.

Conceptually, the training load for a given period is the average student strength for the period, and approximates man-years. The total training load is the sum of the loads for all the included individual courses. Training loads for individual courses are determined by the following factors:

1. The length of the training course.

2. The desired number of graduates, or output, of the course.

3. The number of entrants, or inputs, into the course required to obtain the desired output. This, in turn, depends on the pattern of attrition, or failures of entrants to graduate, for the course.

If attrition occurs at a constant rate during a course, the training load is computed by the following formula:

$$\frac{\text{Entrants} + \text{Graduates}}{2} \times \text{Course Length (expressed as a fraction of a year)} = \text{Load}$$

This is the basic method for computing the training loads discussed in this report. However, if attrition does not occur at a uniform rate, as is frequently the case, and the rate and phasing can be specified, more complex formulas and computer simulations are used to estimate training loads.

Accuracy in Projecting Training Loads

In accordance with law, training load authorizations must be requested well in advance of the period when the training is actually conducted. This year, for example, in addition to the more refined estimates of loads needed for FY 1979, load authorizations must be requested for the fiscal year which begins more than a year after the request is submitted -- that is, loads for FY 1980, beginning October 1, 1979, must be requested in the spring of 1978. This statutory requirement implies the capability to predict future training loads with precision. In actuality, while loads for some long-leadtime programs, such as the Service Academies, can be predicted with considerable accuracy, there are many uncertainties in projecting training loads. Some of the causes of uncertainty are:

1. Unpredictability of individual decisions to enlist or reenlist; this factor may lead to unanticipated changes in the skill inventory, requiring changes in the composition or size of training loads, or to shifts of portions of the training load from one fiscal period to the following period.

2. Unanticipated changes in force structure, requiring a readjustment of the skill inventory and the mix of courses in the training load.

3. Changes in attrition rates and patterns, causing unprogrammed fluctuations in training rates and loads.

Through forecasting training needs as far as possible into the future and continuous review and adjustment of training inputs and loads, the Services are able to adapt the training system to changing conditions. However, it should be clear that extended projections are subject to error; adjustments are inevitable and, in fact, necessary for good management.

Training Load Request by Component and Category

The tables on the following two pages display in category detail the requested training loads for FY 1979 and FY 1980. The loads for each period are displayed by component and by each of the major categories of training.

Average Military Training Student Loads, Fiscal Year 1979, By Component and Major Training Category

	Recruit Training	Officer Acquisition Training	Specialized Skill Training	Flight Training	Professional Development Education	Total
Active Forces						
Army	20,181 a/	4,661	38,859 a/	811	3,331	67,843
Navy	12,006	5,375	37,435	1,323	1,857	57,996
Marine Corps	9,001	378	10,552	638	755	21,324
Air Force	8,790	5,719	23,400	2,110	4,391	44,410
Sub-Total Loads	49,978 a/	16,133	110,246 a/	4,882	10,334	191,573
Reserve Components						
Army National Guard	5,332 a/	42	6,241 a/	88	90	11,793
Army Reserve	2,230 a/	122	3,499 a/	48	60	5,959
Naval Reserve	289	40	654	-	8	991
Marine Corps Reserve	1,693	309	1,049	-	23	3,074
Air National Guard	679	-	1,629	121	42	2,471
Air Force Reserve	362	1	750	32	39	1,184
Sub-Total Loads	10,585 a/	514	13,822 a/	289	262	25,472
DoD Total Loads b/	60,563 a/	16,647	124,068 a/	5,171	10,596	217,045

a/ Army One-Station Unit Training (OSUT) loads are included as follows:

Component	Recruit Training	Specialized Skill Training	OSUT Total
Active Army	9,526	7,355	16,881
Army National Guard	2,876	1,948	4,824
Army Reserve	443	464	907
Total	12,845	9,767	22,612

b/ Officer Acquisition enrollees not in active military status in college ROTC programs and Armed Forces Health Professions Scholarship recipients are excluded from loads shown in the table above.

Average Military Training Student Loads, Fiscal Year 1980, By Component and Major Training Category

	Recruit Training	Officer Acquisition Training	Specialized Skill Training	Flight Training	Professional Development Education	Total
Active Forces						
Army	21,264 a/	4,697	39,438 a/	857	3,360	69,616
Navy	14,343	5,328	37,548	1,366	2,009	60,594
Marine Corps	7,512	378	10,256	713	755	19,614
Air Force	8,790	5,654	23,555	2,717	4,384	45,100
Sub-Total Loads	51,909 a/	16,057	110,797 a/	5,653	10,508	194,924
Reserve Components						
Army National Guard	6,544 a/	43	7,335 a/	90	90	14,102
Army Reserve	2,424 a/	123	4,168 a/	38	63	6,816
Naval Reserve	290	40	645	-	8	983
Marine Corps Reserve	1,566	309	1,049	-	23	2,947
Air National Guard	679	-	1,629	94	42	2,444
Air Force Reserve	362	1	750	28	39	1,180
Sub-Total Loads	11,865 a/	516	15,576 a/	250	265	28,472
DoD Total Loads b/	63,774 a/	16,573	126,373 a/	5,903	10,773	223,396

a/ Army One-Station Unit Training (OSUT) loads are included as follows:

Component	Recruit Training	Specialized Skill Training	OSUT Total
Active Army	9,960	7,239	17,199
Army National Guard	3,413	2,372	5,785
Army Reserve	596	598	1,194
Total	13,969	10,209	24,178

b/ Officer Acquisition enrollees not in active military status in college ROTC programs and Armed Forces Health Professions Scholarship recipients are excluded from loads shown in the table above.

II

TRAINING PATTERNS

General

The development of service members through formal training and education and practical experience follows a generally common pattern. The new service member (or, in the case of some Officer Acquisition Training, the prospective service member) first receives training designed to develop the basic attributes of all members of his or her Service. In most cases, the graduate of the initial training is then taught the skills required for a military job at the lowest skill level. Those service members who do not remain beyond their initial enlistments or obligated terms of service do not, in most cases, receive additional formal training. Those who remain, the career members, will further develop their military knowledge and skills through experience in military jobs, interspersed, as required, with training or education needed to prepare them for more responsible positions. During any part of their terms of service, military personnel are also encouraged, as their military assignments may permit, to improve their educational attainments, to the benefit of themselves and their Services through off-duty and voluntary education programs which may be available. This combination of job experience, training and education is essential to the development of a military force which is capable of carrying out the national security mission.

Enlisted personnel usually work in relatively specialized skill fields, whereas the duties of officers, particularly of those in the career force, call for broader expertise. For these reasons, the training and education patterns of officers and enlisted personnel differ, and will be discussed separately in the following sections of this chapter.

Officer Training Patterns

Each Service has developed career patterns to prepare its officers to assume progressively higher command and staff responsibilities. These career patterns are composed of operational assignments, during which the officer learns his profession through experience, and periodic individual training and education, which provide the officer with knowledge and skills needed for progressively more demanding subsequent assignments.

Officer training and education can be divided generally into three types. First, each Service maintains a system of professional military education which is progressive in nature. This education is related more to the increasing responsibilities associated with career progression to more senior grades than to the individual's current assignment or specialty. It is primarily the study of officership and the command

and staff knowledge required of all professionals. The second type of education and training includes the many specific skill-producing courses that are conducted to enable the officer to perform immediately upon assignment to a specialized or functional area. These courses vary in length from a few days to several months. They present, for the most part, strictly job-oriented training, and are often in the nature of orientation or refresher courses. Third, the Services also provide selected officers with advanced academic education, either in-house or at civilian institutions, to meet specific requirements for officers educated in technical, scientific, engineering, and managerial fields. Officers also participate in a variety of other educational programs, many on a part-time basis, usually with the student sharing in the cost.

Training and education for career officers, involving one or more of the types of training and education described above, follow the general patterns outlined in the following paragraphs. The patterns vary among the Services to some extent, and not all officers will participate in all of the schooling described. The number of officers participating in schooling becomes progressively smaller, and participation more selective and demanding, as officers move through their careers.

Non-career officers (those who may be expected to serve only an initial tour of active duty) generally receive training only at the entry level. In some cases, they may receive skill-oriented courses such as pilot training, which is lengthy and results in a commensurately longer active duty obligation, or training as maintenance or communications officers.

Entry Level Training. Upon entry, the young officer's initial training is Service-oriented and intended to prepare him for duties at the lowest operational level -- company, squadron, or ship. The newly commissioned Army officer will attend a basic course conducted by the particular branch of the Army to which he is assigned, such as infantry, armor or artillery. A Navy ensign is usually assigned to school training based on his warfare specialty. The new Marine officer attends the Officer Basic School. A newly commissioned officer in the Air Force may go to Flight Training or training in a technical specialty.

Developmental Training. After some operational experience, the career officer requires further schooling to prepare him for service at the next level -- for example, as a unit commander or a headquarters staff officer. In the Army, this entails a return to his branch school for more advanced training. An Air Force officer could be selected for the Squadron Officer School. A Marine Corps officer would normally attend the Amphibious Warfare Course. Navy officers at this stage in their careers may attend a school in a specialty appropriate to their future assignments.

To satisfy Service requirements and as a further step in professional development, some officers are selected for participation in an advanced

academic educational program at a civilian institution or one of the two Service technical institutes, the Naval Postgraduate School and the Air Force Institute of Technology.

Intermediate Service Schools. As the officer progresses (between six and 16 years of service, depending on Service criteria) he is ready for the next, or command and staff, level of professional schooling in preparation for assuming higher responsibilities. Attendance is competitive, as not all officers are selected to attend. Each Service has such a course; the Armed Forces Staff College, a joint school, is also conducted at this level. Each Service has its own emphasis with regard to this schooling because of its pattern of missions; these differences are reflected in the school curricula.

Senior Service Schools. Subsequent to the intermediate years, little technical training is provided. The final level of professional military education is that of the Senior Service Schools -- the war colleges -- for which attendance is highly selective. The Army, Navy, and Air Force each has a war college. In addition, there is the National Defense University, consisting of the National War College and the Industrial College of the Armed Forces. Officers graduating from the Senior Service Schools have the academic foundation required for command and staff positions at the highest level. The different curricula of these schools reflect the differing patterns of missions among the Services.

Enlisted Training Patterns

An individual entering upon an initial enlistment is provided Recruit Training that introduces him or her to military life. Following this indoctrination training, an individual will follow one of three possible avenues:

1. Initial Skill Training, which prepares the enlistee for an initial duty assignment, or

2. Direct duty assignment on the basis of a skill already acquired in civilian life, or

3. Direct assignment to first duty unit for on-the-job training (OJT).

The Army One-Station Unit Training (OSUT) program is a variation of the first of these three avenues, since it combines Recruit and Initial Skill Training into a single course, followed by assignment to an operational unit. About 47 percent of Active Army entrants to initial enlisted training will be trained under the OSUT program in FY 1979.

The expected distribution of Active Recruit Training graduates in FY 1979 is as follows:

Disposition of Active Recruit Training Graduates in FY 1979

	Army	Navy a/	Marine Corps b/	Air Force
To Initial Skill Training	96%	100%	65%	91%
To Duty Assignment (Civilian-Acquired Skill)	1%	*	*	2%
To Duty Assignment (On-the-Job Training)	3%	-	35%	7%
	100%	100%	100%	100%

*Less than 1/2 percent.

a/ 30% of Navy Recruit Training graduates attend short "Apprenticeship Training" courses (carried under Initial Skill Training in this report) as a preliminary to further training on the job.

b/ This distribution is facilitated, in part, by the fact that the Marine Corps has the longest Recruit Training course of any Service.

As the table indicates, most enlisted personnel receive formal Initial Skill Training to provide them with a basic military skill. The combination of Recruit Training and Initial Skill Training (or Army One-Station Unit Training) is the foundation of the development of enlisted personnel, because it turns civilians into service members who are qualified to fill positions in military units. This initial training of new enlisted entrants to the Services accounts for about two-thirds of all student loads programmed for FY 1979 and about four-fifths of the loads programmed for enlisted personnel.

Other than for on-the-job training in the work environment, enlisted personnel normally receive no further formal training beyond the training previously described during their initial enlistments. The major exception is Navy training, conducted by fleet training centers, in such shipboard duties as firefighting.

Subsequent to reenlistment, an individual may be selected for attendance at a journeyman level course in his specific occupational area. This training emphasizes the appropriate military applications for the skills being taught. In most cases, however, enlisted personnel advance in their skill areas through experience gained on the job and without extensive additional formal training. Some enlisted personnel are given the opportunity to attend NCO professional development training programs which prepare them for increased supervisory and leadership responsibilities.

Normally, few enlisted personnel attend regularly programmed specialized courses after mid-career. There are instances, of course, where new equipment or systems are introduced into a Service, and senior level enlisted personnel are formally trained in operation and maintenance techniques. Selected senior enlisted personnel attend schools, such as the Army's Sergeants Major Academy, which are, on the NCO level, similar in purpose to the Intermediate and Senior Service Schools in the officer education system.

III

RECRUIT TRAINING AND ARMY ONE-STATION UNIT TRAINING

General Description

Recruit Training is the basic introductory and indoctrination training given to enlisted personnel of each Service upon their initial entry into military service. Recruit Training provides an orderly transition from civilian to military life, motivation to become a dedicated and productive member of the service, and instruction in the basic skills which are required by all members of the Military Service involved. Training in each of the Services emphasizes discipline, observance of military rules, social conduct, physical conditioning and the building of self-confidence and pride in being a member of the service. Beyond these common objectives, Recruit Training in each Service is designed to meet the particular training requirements of that Service which are a reflection of the Service mission. The graduate of Recruit Training has the basic knowledge and skills required to qualify him or her, after formal or on-the-job training in a particular skill, for service in an operational unit of the parent Service.

Army One-Station Unit Training (OSUT) is unique in that it combines Recruit Training and Initial Skill Training in certain skills into a single, continuous course conducted by a single training unit. OSUT therefore includes elements of two major training categories; consequently, it is treated separately at the end of this chapter. OSUT training loads are not included within the Recruit Training loads displayed in this chapter.

Recruit Training Load

The training loads for FY 1973 through FY 1981 for each component of each Military Service are in the table on the following page.

TOTAL RECRUIT TRAINING LOADS, FY 1973-81[a/]

Service Component	FY 73	FY 74	FY 75	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81
Army[b/]									
Active	39,119	26,088	25,902	23,611	20,823	12,848	10,655	11,304	10,876
Natl Guard	5,108	3,272	3,283	3,864	4,140	5,272	2,456	3,131	3,009
Reserve	1,861	751	1,847	1,548	1,529	1,791	1,787	1,828	1,960
Navy									
Active	17,578	16,252	18,569	17,642	17,407	15,795	12,006	14,343	13,053
Reserve	436	386	562	281	338	333	289	290	290
Marine Corps									
Active	15,806	12,409	14,112	12,350	11,288	9,690	9,001	7,512	7,326
Reserve	2,308	905	1,717	1,694	1,801	1,963	1,693	1,566	1,566
Air Force									
Active	11,561	9,797	9,720	9,348	8,666	9,690	8,790	8,790	8,790
Natl Guard	510	228	390	475	404	565	679	679	679
Reserve	180	162	298	280	291	362	362	362	362
DoD									
Active	84,064	64,546	68,303	62,951	58,184	48,023	40,452	41,949	40,045
Gd/Res Tot	10,403	5,704	8,097	8,142	8,503	10,286	7,266	7,856	7,866
DoD Total	94,467	70,250	76,400	71,093	66,687	58,309	47,718	49,805	47,911

a/ In this table and in all subsequent tables in this report stating yearly training loads for the years prior to and including FY1977 data are actual, FY 1978 and subsequent year data are estimated.

b/ FY 1976 and subsequent Recruit Training data do not include Army One Station Unit Training loads.

The changes in Recruit Training loads are the result of changes in the number of non-prior service accessions, reductions in the length of recruit training and the introduction of new methods of conducting training. The decrease in Active Army loads reflects the rapidly expanding use of One-Station Unit Training. The trend in Navy loads reflects the relatively lower levels of non-prior service accessions in FY 1978 and FY 1979 and the effect of a sizeable reduction in the length of the Navy Recruit Training course. The lower Active Air Force loads are a result of reduced non-prior service accession requirements from FY 1978 to FY 1979. The reduction in FY 1979 Marine Corps loads comes from the shortening of the Recruit Training course length from eleven weeks to nine weeks.

Recruit Training for Enlisted Men

The following table displays for male Recruit Training the average training loads for each year from FY 1977 to 1980 and, for FY 1979, the number of entrants (input) and number of graduates (output). Data are shown separately for each component of each Service.

Training Inputs, Output, Loads, Recruit Training (Male)
FY 1977 - 1980

Service / Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	18,424	10,398	62,280	54,942	7,938	8,151
Reserve	1,276	1,415	10,734	9,718	1,340	1,139
Guard	3,651	4,414	12,306	10,888	1,572	2,247
Navy						
Active	16,671	15,086	79,201	69,273	11,258	13,449
Reserve	298	318	2,008	1,809	289	290
Marine Corps						
Active	11,032	9,311	40,500	37,621	8,609	7,011
Reserve	1,765	1,927	8,000	7,209	1,657	1,530
Air Force						
Active	7,545	7,972	57,700	53,430	7,143	7,081
Reserve	154	199	1,762	1,596	199	199
Guard	254	395	4,500	4,077	509	509
DoD						
Active	53,672	42,767	239,681	215,266	34,948	35,692
Res/Gd Tot	7,398	8,668	39,310	35,297	5,566	5,914
DoD Total	61,070	51,435	278,991	250,563	40,514	41,606

Recruit Training for Enlisted Women

Each of the Services conducts training for women recruits which is similar in concept to Recruit Training for males.

In the Navy and Air Force, Recruit Training for men and women is collocated, and the syllabi for men and women are much the same. The major difference between the male and female courses is that women recruits generally receive less training in weapons use or other combat-oriented skills. However, the Army provides its women recruits training in weapons use and defensive tactics; the Navy and Air Force provide their women recruits some small-arms training. In place of the combat subjects women may receive instruction in subjects which facilitate their transition into military life in a particular Service; in the case of the Marine Corps, the length of training for women is made somewhat shorter.

Training data for women recruits are included in the data for Recruit Training as a whole in the subsequent sections of this chapter. The following table separately displays relevant load data for women's Recruit Training.

Training Inputs, Output, Loads, Recruit Training (Female)
FY 1977 - 1980

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	2,399	2,450	18,500	16,480	2,717	3,153
Reserve	253	376	4,998	4,483	447	689
Guard	489	858	6,500	5,813	884	884
Navy						
Active	736	709	5,525	4,785	748	894
Reserve	40	15	-0-	-0-	-0-	-0-
Marine Corps						
Active	256	379	2,284	2,034	392	501
Reserve	36	36	216	193	36	36
Air Force						
Active	1,121	1,718	13,300	12,316	1,647	1,709
Reserve	137	163	1,442	1,306	163	163
Guard	150	170	1,500	1,359	170	170
DoD						
Active	4,512	5,256	39,609	35,615	5,504	6,257
Res/Gd Tot	1,105	1,618	14,656	13,154	1,700	1,942
DoD Total	5,617	6,874	54,265	48,769	7,204	8,199

Rationale for Recruit Training

The underlying philosophy of Recruit Training in each of the Services is that the demands of military service are fundamentally different from those of civilian life. Military service requires a high level of discipline and physical fitness, a homogeneity of outlook, and an ability to live and work as part of a highly structured organization. There are few parallels in civilian society to the demands of military service.

Each recruit, therefore, must be transformed into a member of the military team in order to function effectively in the military environment. The attitudes, habits, and basic skills formed in Recruit Training are the foundation of a cohesive military organization. Later training provides the skills and knowledge needed for specific jobs; Recruit Training shapes the civilian entrant into a dedicated member of his or her Military Service with the potential for further development.

The major determinants of Recruit Training loads are the total number of people entering service who must receive Recruit Training (input), the length of the training course, and projected patterns of attrition. Course length and attrition are discussed later in this chapter. The following two sections discuss inputs: first, inputs of active duty personnel, and second, inputs of members of the Reserve Components on active duty for initial training.

Active Duty Input

The annual recruiting objective for active duty enlistees without prior military service is a function of the following factors:

1. The projected requirement for trained enlisted personnel.
2. Current enlisted trained strengths.
3. Number of enlisted personnel currently in training.
4. Projected enlisted losses through separations or other reasons (e.g., desertion, death, acceptance of a commission, etc.).
5. Projected prior-service enlistments -- that is, the return from civilian life of former service members.

"Trained strength" is the number of personnel required to fill "structure" spaces (i.e., positions in military organizations which require specific grades and skills) and individual "pipeline" spaces, such as transients en route between assignments. The Defense Manpower Requirements Report contains a full discussion of how military manpower requirements are determined. The projected trained strength requirement is compared with the projected trained strength inventory to forecast future skill and strength imbalances. Future shortages which are not expected to be satisfied either by prior-service enlistees or service members currently in skill training courses determine the training output needed to man the force with trained personnel. To determine the necessary input to achieve this output, allowance must be made for course attrition, the number of students entering a course of instruction who fail to complete it. The total input requirement must, therefore, be increased to compensate for expected attrition losses.

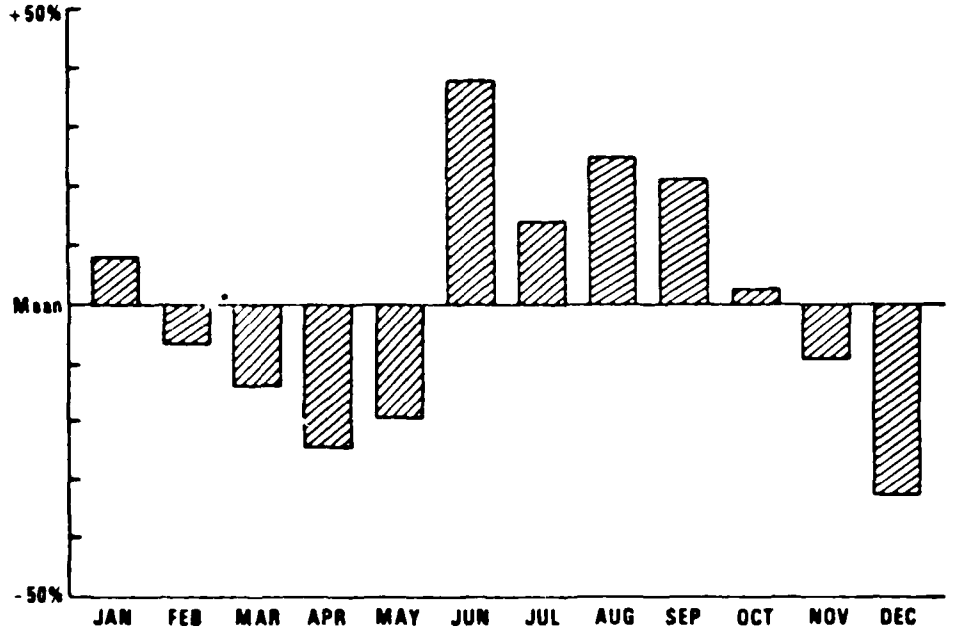
The optimal leveling of monthly inputs to obtain the most efficient use of training staff personnel and training facilities is a

continuing goal. However, the phasing of inputs must at times be varied in order to take advantage of the best recruiting periods for maintaining quality and quantity.

Historically, June through September and January have been the most productive recruiting months, reflecting behavioral patterns which are related to the civilian academic calendar. Enlistments increase (1) shortly after high school graduation, (2) when peers return to school in the fall, and (3) after the results of the first term academic work are announced.

The graph that follows illustrates the seasonal variations in enlistments during calendar year 1976, which is generally typical of recent Service experience.

SEASONAL VARIATION IN ENLISTMENTS, CALENDAR YEAR 1976
(Percent Above or Below Monthly Average)



The Services must accept most prospective enlistees at the time they are ready to enter service. Requiring enlistees to enter military service in phase with requirements and on an even-flow basis would result in the loss of many potential enlistees to other sources of employment. Accepting enlistees as they become available, however, requires a training structure capable of accommodating peak surges of enlistments.

Reserve Component Input

Persons enlisting in the National Guard and Reserve forces without active duty experience require the same Recruit Training as active duty enlistees, and for the same reasons. Recruit Training loads for the Reserve Components are based on the same factors as active force loads. Guard and Reserve trainees, while in Recruit Training, are mingled with active duty trainees in units so that their training is identical.

Reserve Component recruits form a significant part of the workload of the active Recruit Training establishment. In FY 1979, 15.2 percent of DoD Recruit Training loads, and 28.5 percent of Army's, are attributable to Guard and Reserve trainees.

The planning considerations for Reserve Component personnel are essentially similar to those for the active force; detailed phasing of this training is complicated, however, by the additional consideration of civilian employment or school commitments for these personnel. For this reason, a pool of personnel who have been enlisted but who have not yet been able to attend entry training is normal. It is important that this backlog is kept within a reasonable size.

Course Length and Course Content

Enlisted training loads depend not only upon the numbers of entrants but also on the extent of skills required of entering enlisted personnel by each Service. Enlisted personnel attain those skills in Recruit Training and in Specialized Skill Training, which is discussed in a subsequent chapter. Thus, Recruit Training course lengths are determined in part by how much of the required training is to be provided during the Recruit Training phase and how much is to be deferred to later training. The four Services, because of differences in their missions, take somewhat different approaches in establishing the content and length of their Recruit Training courses.

Recruit Training in each of the Services covers four areas: (1) some processing and testing; (2) introduction into Service life; (3) instruction in military courtesy, discipline, and hygiene; and (4) fundamental military-related training involving physical fitness, military drill, and self-defense. In addition, each Service provides training in military skills which should be possessed by all, or almost all, members of that Service. The degree to which these Service-wide required skills exist differs widely among the Services. This factor accounts for most of the differences in course content and, therefore, course length. The variance in quality of enlistees among the Services also has a bearing on course length; recruits with lower intelligence and lesser amenability to discipline require a longer training period to achieve training objectives.

The length of the standard Recruit Training course in each Service is shown in the following table:

Recruit Training Course Length FY 1979 (Weeks)

Army	Navy	Marine Corps	Air Force
7	6.7	9	6

The Air Force accomplishes all Recruit Training in six weeks. Course content concentrates on indoctrination subjects. Relatively little training in Service-wide skills is provided, since there are few common skills needed by all Air Force enlisted personnel.

The Navy Recruit Training course length was reduced from nine to eight weeks in February 1977 and will be further reduced by nine days in FY 1979. In addition to subjects oriented toward indoctrinating recruits to military life, the course includes phases designed to prepare them for conditions in a fleet environment. The Navy must be sure that recruits learn to live, work, and fight in restricted space as they will find on board ship, often close to complex machinery and weapons.

Army and Marine Corps Recruit Training differ from the Air Force and Navy programs because all recruits are given intensive physical conditioning and instruction in basic ground combat skills, including the use of individual weapons. These Services subscribe to the view that all male enlisted personnel must achieve a basic level of qualification in ground combat skills, and their Recruit Training curricula both provide a common core of training in these skills.

The Army conducts a two-week refresher program for prior-service personnel who require some retraining. The Army also has been conducting a two-week Recruit Training program for Reserve Component women enlistees who have civilian-acquired skills which satisfy specific job requirements in their component.

The average length of time spent in recruit status in any of the Services may be longer than the standard course lengths discussed above. Some recruits fall behind their peers because of illness. Others require remedial training. If this cannot be accomplished by additional instructional hours the recruit may be sent to a special training unit or recycled to a following class to repeat a portion of the course.

Considering the importance of Recruit Training to subsequent performance of enlisted personnel, the FY 1979 course lengths are the minimum that can meet the requirement. The common objective of transforming a civilian into a disciplined service member tends to set a

floor under the length of Recruit Training in each of the Services. Relatively few recruits have had much experience with life in a disciplined environment, been separated from their families and friends, or subjected to the stresses imposed by military life. Compensating for these factors takes not only training but also time. A minimum of six weeks in Recruit Training appears necessary to accomplish this objective alone in any of the Services. Greater amounts of time are required for those Services which must provide extensive training in required common skills.

Training time for new enlistees has been reduced to the minimum considered essential in the various Services.

- The length of Navy Recruit Training has been reduced from eight to just under seven weeks.

- The Army has achieved savings in training time for new enlistees through the One-Station Unit Training program, which is discussed later in this chapter. In addition, processing time prior to the beginning of the training syllabus has been reduced by two days.

- The length of Marine Corps Recruit Training goes from eleven weeks to nine weeks in FY 1979.

- The reductions in the Navy and Marine Corps courses result, in part, from the elimination of "Service Week", a period devoted to mess duty and other details of limited value.

These reductions have been put into effect only after careful analysis of Service requirements and, particularly in the case of the Army, through extensive testing. The resulting training should fully meet the objectives of Recruit Training in each of the Services.

Attrition in Recruit Training

A final factor in the computation of loads is the projection of the rate and timing of attrition. Recruits may fail to complete training for medical reasons, inability to absorb the instruction, lack of motivation, disciplinary problems, or a variety of administrative causes, such as discharge for fraudulent enlistment or family hardship. The following table shows projected attrition losses for FY 1979. Recruit Training input figures are shown for comparison.

Recruit Training Input and Attrition Projections, FY 1979 a/
(Active and Reserve Combined)
(Thousands)

	Army	Navy	Marine Corps	Air Force
Input	115.3	86.7	51.0	80.2
Attrition Losses	13.0	10.7	3.9	6.1
Percent Attrition	11.3%	12.3%	7.6%	7.6%

a/ Figures include both active force and Reserve Component members.

The timing of attrition varies from case to case. In the case of slow learners or individuals who have difficulty in adjusting to military life, trainees usually are recycled or given special instruction; those who do not respond adequately may not become attrition losses until late in the course.

Army One-Station Unit Training

The Army's One-Station Unit Training (OSUT) program combines Recruit Training and Initial Skill Training for certain skills into a single continuous course. Consequently, this report treats OSUT separately rather than arbitrarily breaking it into two segments.

OSUT loads for FY 1976 through 1981 are shown in the following table.

OSUT Training Loads, FY 1976-81

Service Component	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81
Army						
Active	1,483	6,660	9,736	16,881	17,199	16,742
Reserve	43	212	528	907	1,194	1,096
Natl Guard	426	1,553	3,043	4,824	5,785	5,577
Res/Gd Tot	469	1,765	3,571	5,731	6,979	6,673
DoD Total	1,952	8,425	13,307	22,612	24,178	23,415

The following table displays OSUT inputs and outputs, as well as loads, for FY 1979.

Training Inputs, Outputs and Loads, OSUT, FY 1979

Service Component	Inputs	Outputs	Loads
Army			
Active	72,220	64,182	16,881
Reserve	3,906	3,473	907
Natl Guard	22,025	19,639	4,824
Res/Gd Total	25,931	23,112	5,731
DoD Total	98,151	87,294	22,612

OSUT is a rapidly expanding program. In FY 1976, less than five percent of Army non-prior service entrants were trained under OSUT. In FY 1979, about 47 percent of Active Army entrants to initial enlisted training and 43 percent of Reserve and National Guard entrants will be trained by this method.

A major advantage is that OSUT requires less training time than the separate Recruit Training and Initial Skill Training courses which it is replacing. The following table shows training time for current and projected OSUT courses:

OSUT Training Time

Skill Area	Training Time (Weeks)
Infantry	12
Artillery	12
Armor	13
Engineer	12
Signal	12
Military Police	12

The time required to complete Recruit Training and the Initial Skill Training courses in these skills previously averaged about 16 weeks,

including the time required to move the trainee from one training organization to another. The shorter OSUT course lengths thus provide a large savings in trainee manyears and, consequently, in trainee pay, allowances and support costs. These savings are permitted by the reduction in the statutory training time a non-prior service enlistee must receive before deployment overseas from four months to 12 weeks. The Army's extensive tests of OSUT indicate that the quality of OSUT graduates is generally as good as the quality of personnel trained under the longer two-course training system

IV

OFFICER ACQUISITION TRAINING

General Description

Officer Acquisition Training consists of training and education programs leading to a commission in one of the Military Services. These programs fulfill the need both for junior officer entrants into the career force and for non-career junior officers in the force structure. Officer Acquisition Training programs produce officers for both the active forces and the Reserve Components. This category includes Officer Candidate School programs and Other Enlisted Commissioning Programs and Health Professions Acquisition Programs.

Training loads for Officer Acquisition Training are shown in the table on the following page.

Total Officer Acquisition Training Loads, FY 1973-81

Service / Component	FY 73	FY 74	FY 75	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81
Army									
Active	5,780	5,356	5,235	5,219	4,720	4,771	4,661	4,697	4,667
Nat'l. Guard	-	-	2	15	34	46	42	43	43
Reserve	157	130	149	135	128	123	122	123	123
Navy									
Active	7,169	6,910	6,791	6,468	6,072	5,617	5,375	5,328	5,257
Reserve	179	108	126	100	35	40	40	40	40
Marine Corps									
Active	398	414	486	434	359	359	378	378	378
Reserve	271	285	319	293	301	309	309	309	309
Air Force									
Active	5,842	5,784	5,797	5,255	5,008	5,540	5,719	5,654	5,676
Nat'l. Guard	1	-	-	-	-	-	-	-	-
Reserve	25	20	4	2	1	9	1	1	1
DoD									
Active	19,189	18,464	18,309	17,376	16,159	16,287	16,133	16,057	15,978
Gd/Res Total	633	543	600	545	499	527	514	516	519
DoD Total	19,822	19,007	18,909	17,921	16,658	16,814	16,647	16,573	16,497

Excluded ROTC and Health Professions Acquisition Programs

The total loads above do not include two types of Officer Acquisition Training: the Army, Navy, and Air Force Reserve Officers Training Corps (ROTC) programs and the Armed Forces Health Professions Scholarship program. ROTC and Health Professions Scholarship students are not in active military status, whereas students who make up the training loads discussed in this report are either members of the active forces or members of the reserve components being trained on active duty by the active establishments. Although these two programs are not included in the requested training loads, they are discussed in this chapter to provide a complete account of Officer Acquisition Training. The following tables show the number of participants in these programs in the period FY 1977 through 1980.

Average Enrollees, ROTC Programs, FY 1977-80

Service	FY 1977	FY 1978	FY 1979	FY 1980
Army	53,618	62,195	67,231	69,192
Navy	7,685	7,869	7,869	7,869
Air Force	15,191	15,566	16,076	16,583
DoD Total	76,494	85,630	91,176	93,644

Health Professions Scholarships, FY 1977-80

	FY 1977	FY 1978	FY 1979	FY 1980
Army	1,850	1,850	1,850	1,850
Navy	1,575	1,575	1,575	1,575
Air Force	1,575	1,575	1,575	1,575
DoD Total	5,000	5,000	5,000	5,000

The figures shown above for Health Professions Scholarships are on a "scholarships authorized" basis. The figures are those currently authorized by DoD to each Service from the total of 5,000 authorized scholarships.

Junior ROTC is a program designed to develop leadership qualities, good citizenship, and an understanding of the basic elements of national security among high school students. Despite its name, it is not an officer acquisition program, since it does not result in a commission and its participants have no military obligation whatsoever. Junior ROTC is not included within training loads covered by this report.

Officer Requirements and Structuring the Officer Acquisition Program

Requirements for new officers, like requirements for new enlisted personnel, are a product of the need for officers in the projected force

as compared to the projected future inventory of officers. Properly functioning programs fill the gross requirements for officer entrants for any given year, and provide an even flow of sufficient new officers to each Service to avoid the emergence of unmanageable shortages and overages by age and grade in the future. Each of the Services uses a mix of sources for new officers.

The mix of officer acquisition programs used must recognize the characteristics of each source. Some of the differing characteristics of current programs are stable input, long lead-time; flexible inputs, short lead-time; high academic quality with comprehensive military indoctrination; and high level of technical skill. Additionally, consideration must be given to each program's ability to attract applicants, the quality of the graduates, and their probable retention and attrition. These differences and others must be recognized and exploited in planning officer procurement.

As an illustration of program characteristics, each of the Service Academies presents a long lead-time program which produces a significant proportion of highly trained career military officers -- 42 percent of Regular Army officers to be commissioned in FY 1979, for example.

ROTC is also a long lead-time program and provides the largest single input of officers to the active duty force, although many of these officers will leave active duty and join the reserve components. In this manner, ROTC provides officers to support the total force, both active and reserve.

Officer Candidate Schools provide the short lead-time commissioning source necessary to respond to immediate surges in officer requirements, since the program can be expanded or reduced in a relatively short period of time.

The off-campus commissioning programs, such as the Navy's Aviation Reserve Officer Candidate (AVROC) program, are long lead-time programs, and provide the student at virtually any four-year college or university the opportunity to earn a commission through summer training but without military responsibilities during the school year. Finally, Other Enlisted Commissioning Programs are long lead-time in nature, and provide a source of officers who possess specific technical skills and who have a proven high rate of retention.

In addition to these reasons for using a variety of sources to satisfy officer requirements, it is also desirable to use different sources to keep the officer corps from being restricted to a narrow segment of the national population and to provide opportunities for highly qualified enlisted personnel.

Officer Acquisition Training may be divided into six separate programs:

Service Academies
ROTC
Officer Candidate Schools
Off-Campus Commissioning Programs
Enlisted Commissioning Programs
Health Professions Acquisition Programs

Service Academies

The mission of each of the Service Academies (United States Military Academy, United States Naval Academy and United States Air Force Academy) is to meet a portion of the long-range requirement for career military officers. They provide instruction and experience to each cadet or midshipman so that he or she graduates with the knowledge and character essential to leadership and with the motivation to become a career officer. Cadets and midshipmen participate in a four-year program of academic studies and training in leadership and other military subjects. Successful completion of the specified academic and military requirements entitles the graduate to a Bachelor of Science degree and a Regular commission in one of the Military Services. Up to one-sixth of Naval Academy graduates in each year may be commissioned in the Marine Corps.

The Service Academies are distinctive among the collegiate institutions of the nation in that their curricula are specifically designed to prepare young men and women for service as professional officers. The total curriculum at each Academy is designed to develop the qualities of character, intellect, and physical competence needed by the officer who may, in the course of a full career, be called upon to perform duties ranging from leading a small combat unit to advising the highest government councils. The programs include the sciences, the humanities, and military and physical training, and form the basis for further professional development or, when required, graduate education.

The maximum enrollment of each of the Service Academies is established by law. This fact establishes stable training loads for the Academies. Training load data for the Service Academies are shown in the following table:

Training Inputs, Output, Loads, Service Academies
FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army	4,053	4,247	1,420	915	4,150	4,154
Navy	4,229	4,225	1,325	1,000	4,225	4,225
Air Force	4,289	4,395	1,407	902	4,325	4,325
DoD Total	12,571	12,867	4,152	2,817	12,709	12,704

Three hundred fifty-seven women entered the Service Academies for the first time in June/July 1976 as authorized by Congress in the Defense Appropriation Authorization Act for 1976, Public Law 94-106. One hundred nineteen women accepted appointments to the Military Academy, 81 women to the Naval Academy and 157 women to the Air Force Academy. In June/July 1977, 104 women accepted appointments to the Military Academy, 90 women to the Naval Academy and 154 women to the Air Force Academy. Women are undergoing virtually the same education and training program as their male counterparts and will satisfy the same requirements for graduation.

Each of the Military Departments sponsors an Academy preparatory school. Marine Corps personnel attend the Navy school. The missions of these schools are to provide intensive instruction and guidance, in courses of instruction approximating one academic year, to selected enlisted personnel in preparation for entry to the Service Academies. Students compete for appointments by the Secretaries of the Military Departments and from other sources. The Naval Academy Preparatory School also provides instruction to candidates for the Marine Corps Enlisted Commissioning Education Program during the summer months.

The Army searches for potential cadets within the Army Reserve, and selected personnel may attend the Preparatory School. These are reflected within the data of the following table.

Training Inputs, Output, Loads,
Academy Preparatory Schools, FY 1977-80

Service / Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	135	139	170	130	139	139
Reserve	125	122	150	114	122	122
Navy						
Active	198	196	219	169	198	187
USMC						
Active	27	30	50	30	30	30
Air Force						
Active	174	188	275	170	174	174
DoD						
Active	534	553	714	499	541	530
Reserve	125	122	150	114	122	122
DoD Total	659	675	864	613	663	652

ROTC Programs

ROTC is a long lead-time program which is the single largest source of officers for the Armed Forces. Like the Service Academies, ROTC is used to provide a relatively constant input of officers for active duty, but ROTC also provides non-career officers as well as career officers. The program is currently conducted at 350 civilian colleges and universities throughout the nation. The Army, Navy, and Air Force each sponsor an ROTC program; up to one-sixth of the Navy graduates may be commissioned in the Marine Corps. Scholarships and subsistence allowances authorized by law, in addition to conventional recruiting and advertising methods, are used to attract qualified students. Scholarships are awarded to young men and women who exhibit potential ability and interest in fields of projected Service needs.

There are both scholarship and non-scholarship, as well as two-year and four-year, ROTC programs. The curriculum of each program is tailored to the needs of the individual Services. For example, the Navy teaches the basics of ship navigation, while the Army teaches the fundamentals of ground combat and the Air Force provides some basic instruction in aerospace history and doctrine. Each of the programs includes instruction in leadership, military customs and military history, and each program provides prospective officers with a gradual transition from the civilian environment to the military environment. Each ROTC program consists of a series of regularly scheduled academic classes throughout the school year combined with mandatory summer camps or cruises which are designed to give the student realistic military experience and a first-hand view of military life.

As noted at the beginning of this chapter, the ROTC program is not included in Service training loads because the students are not in an active military status. The following table provides the numbers of entrants, graduates, and total participants in the three Service programs during FY 1979.

ROTC Programs in FY 1979

Service	Entrants	Graduates	Average Enrollments	Average Number of Scholarship Enrollees
Army	45,234	7,784	67,231	6,360
Navy	3,012	1,457	7,869	5,754
Air Force	17,315	2,671	16,076	6,116
DoD Total	65,561	11,912	91,176	18,230

The Department of Defense is continuing to press for improved efficiency in ROTC programs. During the past year the number of low-production Army ROTC units has been substantially reduced. By working

intensively to increase enrollments in all of its units, the Army has reduced the number of units below the DoD viability standard (17 students enrolled in the third year) from 87 units in FY 1976 to 14 in FY 1978.

Off-Campus Commissioning Programs

Officer Acquisition Training programs in which college students participate but which are conducted off the college campus are the Navy's Aviation Reserve Officer Candidate (AVROC) program and the Marine Corps Platoon Leaders Class (PLC). These programs provide for enlistment as a Naval or Marine Corps Reservist while the student is still an undergraduate and require participation in summer military training.

Students participating in these programs attend either one or two summer training sessions, depending upon when, during their college career, they were enrolled. The objectives of the programs are to indoctrinate, motivate, and train the enrollees by providing instruction in basic military subjects, leadership, and physical training. In addition, students enrolled in the Aviation Reserve Officer Candidate programs receive limited flight orientation training and attend Navy Officer Candidate courses prior to receiving their commissions. PLC students are commissioned when their college degrees are conferred; the newly commissioned officers then attend the Marine Corps Officer Basic Course.

In conformance with the nature of these programs, the training loads in the following table are based only on the time spent in summer training. Loads, consequently, are low as compared to inputs and outputs.

The Navy Reserve Officer Candidate (ROC) program, for candidates in fields other than aviation, was discontinued at the end of FY 1976. The ROC load for FY 1976 (28) is not included in the following load table; however, this load is included in the summary table on page IV-2.

Training Inputs, Output, Loads,
Off-Campus Commissioning Programs
FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Naval Reserve						
AVROC	30	40	300	210	40	40
USMC Reserve						
PLC	300	308	2,700	2,150	308	308
DoD Total	330	348	3,000	2,360	348	348

Officer Candidate Schools (OCS)

Each of the Military Services operates an Officer Candidate School. The Air Force school is entitled Officer Training School.

Enlisted members can use this route to "rise from the ranks". The existence of OCS programs, and the other enlisted commissioning programs covered in the next section, is therefore a significant advancement incentive to ambitious and promising enlisted personnel.

The Navy, Marine Corps and Air Force offer direct entry into OCS to selected college graduates without previous enlisted service. Some college students in highly specialized academic disciplines, such as engineering and physical sciences, feel that they cannot afford the time required to participate in ROTC; OCS allows a way to a commission for these persons and, as well, for other well-qualified persons who choose to become officers after graduation from college.

OCS training of all Services is open to men and women. The following table shows the lengths of the various courses.

Course Lengths, Officer Candidate Schools

Service Course	Course Length (Weeks)
Army	
OCS (Male and Female Students)	14
Navy	
OCS (Male and Female Students)	16
Aviation OCS	12
Marine Corps	
OCS (Male and Female Students)	10
Air Force	
OTS (Male and Female Students)	12

Load data for OCS programs are shown in the following table.

Training Inputs, Output, Loads, Officer Candidate Schools FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	217	185	824	733	216	200
Reserve	3	1	-	-	-	1
Guard	34	46	250	213	42	43
Navy						
Active	575	493	1,953	1,607	511	550
USMC						
Active	120	124	775	541	138	138
Reserve	1	1	4	3	1	1
Air Force						
Active	180	402	3,468	2,807	739	711
Reserve	1	9	5	4	1	1
DoD						
Active	1,092	1,204	7,020	5,688	1,606	1,599
Res/Gd Total	39	57	259	220	44	46
DoD Total	1,131	1,261	7,279	5,908	1,650	1,645

Other Enlisted Commissioning Programs

The Air Force, Navy, and Marine Corps each have enlisted commissioning programs in addition to Officer Candidate courses. The purposes of these programs are: (1) to provide a source of officers in specific skills with an expected high rate of retention; (2) to provide an avenue whereby enlisted personnel with proven qualifications can augment the commissioned ranks; and (3) to provide a measure of motivation to enlisted personnel. The Naval Enlisted Scientific Education Program for enlisted Naval and Marine Corps personnel, provides up to four years of college education leading to a baccalaureate degree in one of the major areas of engineering or mathematics and a commission in the Regular Navy or Marine Corps. This program will be phased out by FY 1981. A similar program, the Marine Enlisted Commissioning Education Program, has been expanded to offer degrees in technical and liberal arts academic disciplines. Students in the USAF Airman Education and Commissioning Program major in engineering, computer science, or physical science, with matriculation up to three years; the average academic time spent in the program is about 21 months. In all these enlisted commissioning programs, participants attend the Officer Candidate School of their Service before they are commissioned.

The following table displays load data for these programs. All participants are members of the active forces.

Training Inputs, Output, Loads,
Other Enlisted Commissioning Programs, FY 1977-80

Service	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Navy	811	513	175	435	339	324
Marine Corps	212	205	115	75	210	210
Air Force	99	400	200	200	400	400
DoD Total	1,122	1,118	490	710	949	934

Health Professions Acquisition Programs

This subcategory may be conveniently divided into three parts, the Armed Forces Health Professions Scholarship Program, the Uniformed Services University of the Health Sciences Program, and "other health professions acquisition programs."

The Health Professions Scholarship program was established in 1972 by Public Law 92-426. Participants are selected from among students, or those accepted for enrollment, in recognized health professions schools. Participants are commissioned in grade O1 in the Reserve of their parent Service, but, except for a short period of annual active duty, are not in active status.

They are, therefore, not included within the training loads of their Services. Upon graduation, participants must serve obligated tours of duty, the length of which depends on the length of their participation in the program.

The program is authorized a total of 5,000 scholarships at its current level. Service data for FY 1979 is shown in the following table:

Service	Scholarships	FY 1979 Graduates
Army	1,850	565
Navy	1,575	448
Air Force	1,536 a/	425
DoD Total	4,961	1,438

a/ Air Force average is shown. The Air Force is authorized 1,575 scholarships.

"Other health professionals acquisition programs" include a variety of programs with the purpose of recruiting required health professionals into the Services through tuition assistance or other aid. Among the included programs are programs for medicine, dentistry, nursing, and other disciplines in the health professions. Some programs offer assistance for full courses of professional training, whereas others are offered only to students in their final year of study. Some included programs support health professional training for active duty Service members, intended to produce high-retention health professionals. Participants in all programs incur an active duty obligation commensurate with the educational support received.

These programs are being effectively phased out as we are obtaining these resources through other accession programs. The load data is shown in the following table.

Training Inputs, Output, Loads, Other Health Professionals Acquisition Programs, FY 1977-80

Service	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army	278	122	0	17	26	10
Navy	259	190	0	67	102	42
Air Force	266	155	0	37	81	44
DoD Total	803	467	0	121	209	96

An additional acquisition program for health professionals, the Uniformed Services University of the Health Sciences (USUHS), began operation in 1976. In accordance with PL 92-426, the student body of the USUHS is composed of commissioned officers of the Uniformed Services. The first graduates of this program occur in FY 1980. Training inputs, output and loads for this DoD school for FY 1977-1980 are shown below.

FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
39	120	103	-	222 [a/]	328

[a/] 119 is included in the Army training load request. Air Force and Navy loads are not reflected in their respective requests.

V

SPECIALIZED SKILL TRAINING

General Description

Specialized Skill Training provides officer and enlisted personnel with skills and knowledge needed to perform specific jobs. Each Service has established a job structure that makes it possible for it to carry out its assigned missions. Each position in each organization within that job structure has been analyzed to determine the skills necessary to insure that each job is done properly and efficiently. The purpose of Specialized Skill Training is to impart these required skills to the proper number of individuals in a phased manner so that each position vacancy in the structure can be filled promptly with a qualified replacement.

Specialized Skill Training, as used in this report, is characterized by the following:

Inclusions: Initial, progression and functional training for both officers and enlisted personnel. Specialized Skill Training specifically includes Army Advanced Individual Training and Navy Apprenticeship Training. This training category also includes aviation-related ground training and enlisted leadership training below the level of that carried in Professional Development Education.

Exclusions: All Officer Acquisition Training programs, notably Officer Candidate School, formerly included in Specialized Training budget documents.

Army One-Station Unit Training (OSUT), like Specialized Skill Training, provides Army personnel with job-related training in a number of skills. However, since OSUT is conducted as one continuous course which combines Recruit and Specialized Skill Training, it is treated separately in this report (see Chapter III), and OSUT loads are not included in the Specialized Skill Training loads in this chapter.

Specialized Skill Training loads for FY 1973-81 are as shown in the table on the following page.

Total Specialized Skill Training Loads, FY 1973-81

Service Component	FY 73	FY 74	FY 75	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81
Army a/									
Active	57,046	46,039	49,561	42,630	41,399	37,637	31,504	32,199	31,811
Natl Guard	5,846	4,294	4,379	6,488	6,614	7,948	4,293	4,963	5,088
Reserve	3,276	1,701	2,143	3,219	4,259	3,689	3,035	3,570	3,572
Navy									
Active	44,748	37,199	35,165	37,117	35,227	36,080	37,435	37,548	36,271
Reserve	1,291	1,155	676	552	510	609	654	645	645
USMC									
Active	10,910	11,490	9,981	11,117	9,877	10,822	10,552	10,256	10,039
Reserve	963	415	621	588	651	1,141	1,049	1,049	1,049
Air Force									
Active	31,162	30,070	26,092	26,531	25,238	24,463	23,400	23,555	23,536
Natl Guard	1,160	657	792	1,085	1,035	1,431	1,629	1,629	1,629
Reserve	366	319	575	684	686	747	750	750	750
DoD									
Active	143,866	124,798	120,799	117,395	111,741	109,002	102,891	103,558	101,657
Gd/Res Total	12,902	8,541	9,186	12,616	13,755	15,565	11,410	12,606	12,733
DoD Total	156,768	133,339	129,985	130,011	125,496	124,567	114,301	116,164	114,390

a/ FY 1976 and subsequent year Specialized Skill data does not include Army One Station Unit Training loads.

As in the other types of training covered in this report, the demand placed on the training establishment for individuals with certain skills is determined by comparing projected requirements for each skill and skill level with the projected future inventory of trained service members.

When anticipated losses are deducted from the current inventory, shortages in various skill areas are revealed. These shortages, except for those which can be satisfied through on-the-job training, or, in a few cases, through lateral entry from civilian life of individuals who already possess an employable skill, create a demand for a phased output of trained replacement personnel. Estimates are made of the portion of students in each training course who will fail to complete the course. These course attrition factors determine the inputs necessary to achieve the desired course outputs. Inputs, outputs, attrition patterns, and course lengths determine the training loads. These factors are discussed for each sub-category of Specialized Skill Training in the remainder of this chapter.

The table on the preceding page indicates that, overall, Specialized Skill Training is planned for FY 1979 at its lowest level since Vietnam. However, because of shifts to Army OSUT, the magnitude of the decrease for FY 1979 is not as great as the aggregate data suggest. (At least one third of Army OSUT loads would have been categorized as Specialized Skill Training.) Nevertheless, these levels remain prudent and austere.

Specialized Skill Training is the most diverse of the major categories of individual training. In the interest of clarity, the full category has been divided into five sub-categories. Two are concerned with initial skill training, one for officers, the other for enlisted personnel; two others cover more advanced training, again divided by officer and enlisted. The last category covers both officer and enlisted training which, for the most part, imparts required knowledge or skills without changing the student's primary skill or skill level.

Initial Skill Training (Enlisted)

Initial Skill Training (Enlisted) includes all formal training normally given immediately after Recruit Training and leading toward the award of a military occupational specialty or rating at the lowest skill level. Successful completion of the training qualifies the enlisted member to take a position in the job structure of the Service and to progress, through job experience, to the journeyman level. Army One-Station Unit Training satisfies this same purpose but, because it combines the skill training with recruit training in a single course, it is treated separately in this report.

The great majority of Service recruits are drawn from the least skilled segment of the population. Most recruits are under age 21 and have little civilian job experience. In addition, some civilian specialties are not in demand in the military job structure, and many of the most important military skills have no civilian counterpart. Consequently, only a small number of people enter the Service with a skill which can be used with little or no additional training, and enlistees must be trained in a skill before they can become productive. Some skills can be acquired through experience and on-the-job training. Most, however, are most effectively and efficiently learned through formal courses. In some situations, on board ship, for example, the opportunity for on-the-job training is often limited.

Load data for Initial Skill Training (Enlisted) are displayed in the following table. The classification of this training is determined by its purpose, rather than by whether entrants attend immediately after Recruit Training. Thus some prior-service students and cross-trainees from other skill areas may be reflected in these data.

Training Inputs, Output, Loads, Initial Skill Training (Enlisted)
FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	26,120	21,138	88,043	79,331	15,914	16,840
Reserve	2,655	1,902	9,807	8,845	1,526	1,905
Natl Guard	5,481	6,561	18,712	16,933	3,096	3,723
Navy						
Active	19,950	20,375	142,287	130,847	18,202	18,242
Reserve	310	429	4,131	3,832	468	462
USMC						
Active	6,837	7,332	44,325	41,259	7,100	6,891
Reserve	564	981	6,848	5,404	936	936
Air Force						
Active	18,081	16,526	65,779	61,832	15,386	15,386
Reserve	560	627	3,825	3,605	627	627
Natl Guard	682	1,068	5,700	5,358	1,237	1,237
DoD						
Active	70,988	65,371	340,434	313,269	56,602	57,349
Res/Gd Tot	10,252	11,568	49,023	43,977	7,890	8,690
DoD Total	81,240	76,939	389,457	357,246	64,492	66,039

Reflecting the variety of skills required in the four Services, there are a large number of courses for enlisted personnel in Initial Skill Training, as shown in the following table:

Number of Courses, Initial Skill Training (Enlisted), FY 1979

Army	Navy	Marine Corps	Air Force
173	144	225 a/	268

a/ Includes courses conducted by the Navy and other Services programmed for attendance by Marines.

Some of these courses are in highly technical skills, such as nuclear reactor specialist or electronics technician. Others involve less complex, but not less important, skills -- cook, clerk-typist, mechanic, and vehicle driver. A sampling of the courses in each Service which will produce the most graduates in FY 1979 is shown below:

Courses Producing Most Graduates, FY 1979

	No of Graduates	Length (days)
Army a/		
Medical Specialist	9,964	39
Administrative Specialist	6,968	47
Material Supply Specialist	5,440	67
Unit Organizational Supply Specialist	4,496	49
Tracked Vehicle Mechanic	4,315	66
Navy		
Basic Electricity/Electronics	21,180	53
Aviation Fundamentals	20,094	11
Apprentice Training b/	19,776	18
Machinist Mate	4,790	42
Nuclear Power Fundamentals	4,512	42
Marine Corps		
Infantry Training School	9,649	53
Basic Administrative Clerk	1,955	20
Basic Electronics/Electrical	1,807	38
Basic Electronics	1,392	100
Basic Automotive Mechanic	898	84
Air Force		
Security Specialist	7,243	37
Aircraft Maintenance Specialist (Jet, 1 & 2 Eng.)	3,687	29
Administration Specialist	3,387	44
Jet Engine Mechanic	2,448	76
Aircraft Maintenance Specialist (Jet, over 2 Eng.)	2,975	29

a/ Many of the Army high-density skills (armor, artilleryman, etc.) will be trained through One-Station Unit Training (OSUT) in FY 1979.

b/ Apprentice Training is composed of fundamental training in one of four basic skill areas: Seaman, Fireman, Airman, Constructionman. The course length shown is the average for those four skills

Course lengths vary widely according to the complexity of the subject matter. For example, the Air Force course for avionics aerospace ground equipment specialist is 354 calendar days in length, whereas the course for jet aircraft mechanic specialist takes only 29 days. Army nuclear power plant operators receive an entire year of training, but motor transport operators and general construction machine operators complete their training in 35 days. Average course lengths are displayed in the following table. The Navy average is low in comparison to the others because it includes a large number of students in short courses related to particular shipboard duties and because of the predominance of the relatively short apprentice courses; in addition, Navy personnel, to a greater degree than personnel of other Services, receive supplementary formal training during their first enlistments.

Average Course Lengths (Days), Initial Skill Training (Enlisted), FY 1979

Army	Navy	Marine Corps	Air Force
61	42	60	83

A major Defense concern is to keep course lengths as short as is compatible with required knowledge and skills to be acquired. Marine Corps and Air Force courses lengths have been reduced since last year. With the significantly shorter courses shifted to Army OSUT, the average length of the rest of Army Initial Skill training is greater than the weighted average length including the shorter Army courses. This helps to explain why, in spite of planned innovations and productivity increases, Army average course length does not show a notable decrease.

The final determinant of training loads is the anticipated rate of attrition. Attrition rates must be estimated for each course. The rate may be negligible for a reasonably routine course for which students entered in the course have the necessary mental abilities and motivation. Attrition may run much higher, up to one-third of the class entrants, in complex technical subjects, such as the Army Nuclear Weapons Electronic Specialist course. The average anticipated rates for FY 1979 are as shown:

Average Attrition Rates, Initial Skill Training (Enlisted), FY 1979
(Percent)

Army	Navy	Marine Corps	Air Force
9.8%	6.3%	8.8%	6%

Skill Progression Training (Enlisted)

This sub-category covers skill training received by enlisted personnel subsequent to Initial Skill Training. Through this training, the student gains the knowledge to perform at a more skilled level or in a supervisory position. Skill Progression Training is most frequently given after the Service member has gained experience through actual work in his specialty. In some cases, however, training in a relatively narrow subject area as an immediate follow-on to Initial Skill Training is included in Skill Progression Training.

Training load data for Skill Progression Training (Enlisted) are shown in the following table:

Training Inputs, Output, Loads, Skill Progression Training (Enlisted) FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	3,697	2,879	11,957	11,418	2,731	2,615
Reserve	741	665	2,283	2,271	451	588
Natl Guard	325	402	2,108	2,068	370	442
Navy						
Active	9,731	10,337	77,459	75,012	12,818	12,853
Reserve	43	40	654	612	36	35
USMC						
Active	806	1,024	5,004	5,143	1,097	1,080
Reserve	26	78	828	824	46	46
Air Force						
Active	5,903	6,040	76,564	75,026	6,104	6,144
Reserve	64	65	1,216	1,189	70	70
Natl Guard	300	242	4,766	4,300	271	271
DoD						
Active	20,137	20,280	170,984	166,599	22,750	22,692
Res/Gd	1,499	1,492	11,855	11,264	1,244	1,452
DoD Total	21,636	21,772	182,839	177,863	23,994	24,144

The requirement for Skill Progression Training arises from the fact that training in a skill at entry level and subsequent experience do not, in many cases, fully qualify a service member to do the more advanced jobs in his field without further formal training. Several factors may contribute, singly or in combination, to a need for additional formal training:

1. The introduction of new equipment.

2. The need to produce a higher degree of skill in a sub-specialty.

3. The need to impart a broader base of knowledge to qualify an individual for a supervisory responsibility.

4. The requirement for refresher training to bring the service member up to date on the latest information and techniques in his skill

The primary need, as in all other types of training, is to have trained individuals available to replace losses as they occur. Planning future training in this sub-category follows the same general pattern as for Initial Skill Training. Some additional complications, however, are introduced by the fact that members eligible for schooling are frequently serving overseas or on board ship, rather than flowing from the Recruit Training pipeline. This situation frequently requires that personnel receive the training when they are available, preferably between duty assignments, rather than when they might more easily be accommodated for formal school training.

As is evident in the preceding table, the Navy is an increasingly heavy user of this type of training. The increase for Navy in FY 1979 over FY 1978 is about matched by Navy decreases in Initial Skill training (see the table on page V-4).

The following table displays statistics in Skill Progression Training in each of the Services for FY 1979.

Skill Progression Training (Enlisted), FY 1979

	Army	Navy	Marine Corps	Air Force a/
Number of Courses	106	1,153	175	1,514
Average Course Lengths (Days)	58	51	70	29
Projected Attrition Rate (Percent)	6%	4%	4%	1.5%

a/ Includes courses conducted by the Navy and other Services programmed for attendance by Marines.

The large number of Navy and Air Force courses is a reflection of the technical nature of these Services and their large number of sub-specialties. Of course, part of the difference is attributable to differing Service approaches to course definition and segmenting.

Initial Skill Training (Officer)

As a general rule, Officer Acquisition Training is oriented toward the broad educational background and general military training which is considered necessary for all officers entering a Service. In consequence, most newly commissioned officers require further training for the specific type of duty they will be performing in their first duty assignment. Initial Skill Training for officers is, therefore, analogous to Initial Skill Training for enlisted personnel -- both provide the job-oriented training which, added to the military fundamentals learned earlier, prepares the individual for taking a place in the job structure.

Load data for Initial Skill Training (Officer) are displayed in the following table.

Training Inputs, Output, Loads, Initial Skill Training (Officer), FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	1,488	1,846	7,062	6,929	1,713	1,718
Reserve	205	610	2,407	2,349	612	611
Natl Guard	260	362	1,785	1,757	345	343
Navy						
Active	1,134	1,526	5,069	4,977	1,236	1,244
Reserve	30	32	277	276	30	29
USMC						
Active	1,397	1,557	3,843	3,914	1,400	1,354
Reserve	6	4	6	6	2	2
Air Force						
Active	652	1,096	5,847	5,795	1,129	1,232
Reserve	13	9	99	99	9	9
Natl Guard	23	37	196	195	37	37
DoD						
Active	4,671	6,025	21,821	21,615	5,478	5,548
Res/Gd Tot	537	1,054	4,770	4,682	1,035	1,031
DoD Total	5,208	7,079	26,591	26,297	6,513	6,579

With minor exceptions, all newly commissioned Army officers attend officer basic courses at their branch schools -- Infantry officers at the Infantry School, Engineer officers at the Engineer School, etc. Most of these courses are 12 weeks in length, and the officer attends before reporting to his first unit of assignment. In addition, certain officers are selected to attend follow-on skill or functional training courses for more specialized assignments.

All submarine and nuclear officers and most Surface Navy officers go to Initial Skill Training. The Navy provides 23 courses for officers in Initial Skill Training, with an average length of 104 days.

All newly commissioned Marine Corps officers attend a basic course for general orientation and training. In addition, Marine officers attend 46 Initial Skill Training courses (some conducted by Navy or other Services), averaging 132 days in length, related to specific officer jobs.

The Air Force conducts 52 Initial Skill Training courses for officers, with an average length of 91 days; about 45 percent of newly commissioned officers attend these courses.

Skill Progression Training (Officer)

Skill Progression Training for officers is, in general, aimed at officers with several years of practical experience and provides them knowledge needed to assume more advanced responsibilities. For example, the Army provides advanced courses which are structured to prepare the students for battalion and brigade duties in addition to command responsibilities at the company and battery level. Data for Skill Progression Training (Officer) are displayed in the following table.

Training Inputs, Output, Loads, Skill Progression Training (Officer), FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	2,869	3,221	10,568	10,426	3,179	3,245
Reserve	243	121	910	909	100	79
Natl Guard	342	393	1,121	1,106	244	246
Navy						
Active	999	1,082	11,739	11,579	1,334	1,334
Reserve	15	18	332	320	19	19
USMC						
Active	135	127	553	542	168	163
Reserve	1	6	103	103	4	4
Air Force						
Active	447	648	10,886	10,782	637	637
Reserve	31	28	973	962	28	28
Natl Guard	24	77	838	838	77	77
DoD						
Active	4,450	5,078	33,746	33,329	5,318	5,379
Res/Gd Tot	656	643	4,277	4,238	472	453
DoD Total	5,106	5,721	38,023	37,567	5,790	5,832

The Army conducts 16 branch-oriented courses, which average 26 weeks in length. The Navy maintains 158 courses, averaging 45 days in length, which cover a variety of specialized duties which are typically performed by officers with several years of service -- for example, destroyer officer course, aviation maintenance officer course, and nuclear propulsion plant course.

Both the Marine Corps and the Air Force conduct broad courses for officers at about the same level as the Army's advanced courses; however, as these are Service-wide and uniform in content, they are carried in Professional Development Education. Within Skill Progression Training, Marine Corps officers attend 77 courses, with an average length of 97 days, on a variety of specialized subjects, some conducted by the Navy or other Services. The Air Force has 481 courses, averaging 21 days in length, for the purpose of training officers in new duties required by their prospective assignments.

Functional Training

Functional Training is an "all other" sub-category covering those types of required training which do not fit neatly into the definitions of the other sub-categories. By and large, Functional Training is in subject areas which cut across the scope of military occupational specialties and provides additional required skills without changing the student's primary speciality or skill level. An example is a Damage Control Course conducted by the Navy. Both officers and enlisted personnel participate in Functional Training. Load data for Functional Training are shown in the following table.

Training Inputs, Output, Loads, Functional Training, FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	7,225	8,553	79,913	71,400	7,967	7,791
Reserve	415	391	4,522	4,115	346	387
Natl Guard	206	230	3,294	3,042	238	209
Navy						
Active	3,413	2,760	393,025	383,812	3,845	3,875
Reserve	112	90	9,956	9,918	101	100
USMC						
Active	702	782	8,966	8,225	787	768
Reserve	54	72	1,487	1,477	61	61
Air Force						
Active	155	153	6,897	6,835	144	156
Reserve	18	18	834	823	16	16
Natl Guard	6	7	330	327	7	7
DoD						
Active	11,495	12,248	488,801	470,272	12,743	12,590
Res/Gd Tot	811	808	20,423	19,702	769	780
DoD Total	12,306	13,056	509,224	489,974	13,512	13,370

Army Functional Training includes the airborne, ranger, and special forces qualification courses, some specialized NCO supervision courses, and a number of courses related to specialized equipment (e.g., Manual Cordless Switchboard Repair; 8-inch Atomic Projectile Assembly).

Navy Functional Training differs from that of the other Services because of the very high input to a large number of very short courses (the longest is 12 days, the shortest is one day). Most of the training consists of in-port training for ships' crews, and includes the following types of activity:

1. Shore training for shipboard teams (firefighting, damage control, anti-submarine warfare, etc.).

2. Short basic or refresher courses at fleet training centers in the operation of equipment or systems.

3. Shipboard in-port training assistance.

4. Precommissioning training for newly formed crews of ships under construction.

Marine Corps Functional Training provides skills required for specific jobs but not limited to a primary occupational specialty. Some of the included courses are scuba training, sea duty indoctrination, and drill instruction training.

All Air Force Functional Training is survival training related to various environments: water, arctic, jungle, or tropic.

The following table provides additional statistics on Functional Training.

Courses and Course Lengths, Functional Training, FY 1979

	Army	Navy	Marine Corps	Air Force a/
Number of courses	410	1,532	246	8
Average Course Length (days)	35	4	31	7

a/ Includes courses conducted by the Navy and other Services programmed for attendance by Marines.

VI

FLIGHT TRAINING

General

Flight Training programs provide basic flying skills required prior to operational assignment of pilots, navigators, and naval flight officers. Most of the training in this category is undergraduate flight training; at the conclusion of this training, a graduate is awarded "wings" and is classified as a "designated" or "rated" officer. Flight Training includes programs for pilots of all Services, navigators in the Air Force, and naval flight officers in the Navy and Marine Corps. Pilot training may be in jet or propeller-driven fixed-wing aircraft, or in helicopters. Some related advanced flight training, such as Army instructor pilot training and Air Force navigator/bombardier and electronic warfare training, is also included in Flight Training. Enlisted programs in aviation-related subjects (for example, in air traffic control) and Air Force survival training are in Specialized Skill Training. Marine Corps enlisted navigator training is included in Flight Training.

Flight Training loads, by Service and component, for Fiscal Years 1973 through 1981 are shown in the following table:

Total Flight Training Loads, FY 1973-81

Service Component	FY 73	FY 74	FY 75	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81
Army									
Active	1,106	704	712	709	623	722	811	857	857
Natl Guard	72	69	40	28	35	72	88	90	90
Reserve	19	16	10	10	15	44	48	38	38
Navy									
Active	1,903	1,739	1,495	1,442	1,335	1,322	1,323	1,366	1,366
USMC									
Active	807	988	599	563	658	571	638	713	713
Air Force									
Active	4,506	4,062	3,071	2,068	1,978	1,709	2,110	2,717	3,017
Natl Guard	215	137	127	90	97	96	121	94	94
Reserve	110	48	38	35	30	30	32	28	27
DoD									
Active	8,322	7,493	5,877	4,782	4,594	4,324	4,882	5,653	5,953
Res/Gd Tot	416	270	215	163	177	242	289	250	249
DoD Total	8,738	7,763	6,092	4,945	4,771	4,566	5,171	5,903	6,202

Flight Training loads were reduced by approximately 48 percent over the period FY 1973 to FY 1978 because of the net effect of the following factors:

- Peacetime reductions in active force aviator requirements in all Services, except for moderate increases in Army aviator requirements associated with the 16-division force objective in the later years.

- Restriction of undergraduate flight training for Reserve Component members to the number needed to fill positions in reserve aviation units which cannot be filled through recruitment of experienced aviators leaving active duty -- as, for example, positions in aviation units which are remote from major population centers.

Service forecasts for FY 1979 and beyond call for aviator training rates to rise as aviator overages remaining from the Vietnam peak are dissipated and rates return to sustaining levels needed for meeting currently approved contingency scenarios. Because of the need to avoid expensive flight training which may not be required, the Defense Audit Service is conducting an audit of aviator requirements and inventories in all Services. The results of the audit will be considered in deciding the flight training rates for FY 1980 and beyond.

For purposes of clarity, the following discussion of aviation training is divided into four sections, each treating a sub-category of Flight Training.

Flight Familiarization Training

Flight Familiarization Training is a relatively small and economical primary pilot training program which has been conducted by each of the Services and is closely identified with officer acquisition programs. Its purpose is two-fold: (1) as an incentive, to motivate qualified candidates toward aviation careers, and (2) as a screening device, to identify those candidates most likely to be successful in flying. In connection with the latter purpose, early identification of personnel who lack the desire or potential to become aviators lowers the attrition rate in subsequent, more costly, flight training courses.

A limited number of Military Academy cadets and Naval Academy midshipmen participate in Flight Familiarization Training. Air Force Academy cadets who volunteer and are physically qualified receive similar training during their last year at the Academy. Although the data are not included here, the Air Force Academy also has a very effective and economical soaring program where volunteer cadets learn to fly nonpowered gliders and later, under close officer supervision, experienced and qualified upperclass cadets assist in the instruction in soaring given to underclassmen. Only Air Force ROTC, of the civilian college-based officer acquisition programs, continues to offer Flight Familiarization Training.

In addition to the training connected with officer acquisition programs, the Air Force conducts a separate 24-day flight screening program for other candidates for Undergraduate Pilot Training. In the other Services this is accomplished during the first phase of Undergraduate Pilot Training. At the present time tests of ground-based screening programs to permit controlled and less costly identification of promising flight training candidates are underway. The Army is exploring the use of available flight simulators to assist such screening.

Data showing the scope of these programs are displayed in the following table. Workload data attributable to students in officer acquisition programs (noted in parentheses) are not additive to total Service loads, since they are either already within other Service loads or are included in participation data for ROTC and similar programs.

Training Inputs, Output, Loads, Flight Familiarization Programs, FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
All Components	-	-	(52)	(52)	-	-
Navy						
All Components	-	-	(300)	(210)	-	-
Air Force						
Active	6	10	417	352	26	71
Reserve	1	1	3	4	1	1
Natl Guard	3	4	47	45	4	3
USAF Academy and ROTC	-	-	(673)	(655)	-	-
DoD						
Active	6	10	417	352	26	71
Res/Gd Tot	4	5	50	49	5	4
DoD Total	10	15	467	401	31	75

Undergraduate Pilot Training

The purpose of Undergraduate Pilot Training is to qualify students to perform the basic duties and assume the responsibilities of military pilots. Courses include sufficient flying training to allow the student to attain proficiency in the general class of aircraft (jet, prop, or helicopter) he will be flying in future assignments. Training through flying or in flight simulators is augmented by flight-related ground training and, ordinarily, some officer professional development training to prepare the student for the responsibilities of a junior officer. For the Army, which uses a large number of warrant officer pilots, entrants undergo warrant officer candidate training before entering flight phases of training; they receive their warrants upon graduation from flight training. A minority of Army flight training students are already commissioned officers upon entry. The Navy also has conducted

Navy officer training for aviation officer candidates concurrently with the early phases of flight training.

Training data for FY 1976-79 are displayed in the following table:

Training Inputs, Output, Loads, Undergraduate Pilot Training, FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	493	544	1066	830	626	666
Reserve	6	27	57	45	34	31
Natl Guard	10	44	99	90	62	64
Navy						
Active	841	887	1,201	885	897	940
USMC						
Active	506	455	644	470	522	608
Air Force						
Active	1,203	1,029	1,749	1,050	1,269	1,741
Reserve	23	23	24	21	21	21
Natl Guard	74	72	82	71	72	72
DoD						
Active	3,043	2,915	4,660	3,235	3,314	3,955
Res/Gd Tot	113	166	262	227	189	188
DoD Total	3,156	3,081	4,922	3,462	3,503	4,143

In the FY 1978 President's Budget the Department of Defense proposed to consolidate all Defense undergraduate helicopter pilot training into a single program conducted by Army. A report on the proposal was submitted to the Congress in April last year. After extensive hearings, the House Appropriations Committee, and the full House, approved the proposal. The Senate, and the Conferees, however, rejected the proposal.

This year a generally similar proposal has been accepted by the Secretary of Defense and is incorporated in the FY 1979 President's Budget.

Under the consolidation proposal, the Army will conduct all undergraduate helicopter pilot training for the Military Services. The training program will use helicopters exclusively as training aircraft, rather than both fixed and rotary-wing aircraft as in the current Navy course, and rely heavily on training in modern, highly capable flight simulators. It is expected that the final segment of the course will be Service-unique, reflecting Service mission differences and related training needs. (In the case of the Navy and Marine Corps students, these Service-unique segments will be longer than for other students.) The student body will consist of commissioned officers of all Services and Army warrant officer candidates. For warrant officer candidates

the course is six weeks longer than the course for commissioned officers, as it is also a warrant officer candidate school.

Without sacrificing required quality of training, the proposed consolidation is expected to produce substantial savings in manpower and funding required. Funding savings are estimated to exceed $100 million during FY 1979-83; over 1500 military and 250 civilian spaces will be saved. The phaseover is programmed for completion during FY 1979.

The following table shows programmed course length and projected attrition rates for FY 1979 for each type of student:

Current Course Length and Attrition Rates, Undergraduate Helicopter Pilot Training Students, FY 1979

	Commissioned Officers	Army Warrant Officer Candidates
Course Length (weeks)	34*	40
Attrition Rate (Percent)	10-11	25

*Because of the extended Service-unique phases discussed in the text, Navy and Marine Corps officer students will be in training for an additional several weeks.

Load data for each Service for undergraduate helicopter pilot training are shown below.

Training Inputs, Output, Loads, Undergraduate Helicopter Pilot Training, FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	493	544	1,066	830	626	666
Reserve	6	27	57	45	34	31
Natl Guard	10	44	99	90	62	64
Navy						
Active	134	171	289	215	150	215
USMC						
Active	305	293	419	305	313	362
Air Force						
Active	42	37	82	50	45	61
Reserve	2	1	-	-	-	-
Natl Guard	1	1	-	2	1	-
DoD						
Active	974	1,045	1,856	1,400	1,134	1,304
Res/Gd Tot	19	73	156	137	97	95
DoD Total	993	1,118	2,012	1,537	1,231	1,399

The Navy has been conducting undergraduate helicopter pilot training for all Navy, Marine Corps, and Coast Guard students. Navy and Marine Corps loads for phasing out the current Navy-conducted course and phasing in the proposed consolidated course are in the preceding table for FY 1979.

Navy Undergraduate Pilot Training begins with a common core of basic ground training and primary flight training and then diverges according to whether the student is to be qualified in jet aircraft or propeller aircraft. The basic ground phase, or environmental indoctrination phase, is four weeks in length for officer students and 12 weeks for aviation officer candidates, since this phase also serves as an officer training period for the latter group.

The following table shows course lengths, attrition rates, and type of aircraft used for training for each phase of the syllabus:

Course Phasing, Navy/Marine Corps
Undergraduate Pilot Training

Course/Phase	Course Length (Weeks)	Attrition Rate (Percent)	Type Aircraft
Environmental Indoctrination			
Aviation Officer Candidates	12	10	-
Officers	4	2	-
Primary (all students for jet and prop)	10 (Jet) 16 (Prop)	16 16	T-28 a/
Strike Training (Jet)			
Intermediate Jet	22	11	T-2C
Advanced Jet	20	8	TA-4J
Maritime Training (Prop)			
Intermediate Prop	5	3	T-28
Advanced Prop	17	4	TS-2A b/

a/ Being replaced by the T-34C aircraft.
b/ Being replaced by the T-44 aircraft.

Because of the task requirements which dictate variations in course content, the standard Undergraduate Pilot Training course is as short as

40 weeks for an officer student qualifying in propeller aircraft or as long as 63 weeks for an aviation officer candidate qualifying in jets. Actual course duration may be longer because of unforeseen circumstances such as major aircraft groundings, fuel shortages, or inclement weather. Attrition rates vary considerably, depending on the source of the student, from 15 percent for Regular Navy officers to 30 percent for aviation officer candidates.

The following table displays load data for Navy and Marine Corps Undergraduate Pilot Training. All participants are in the active force.

Training Inputs, Output, Loads, Navy/Marine Corps Undergraduate Pilot Training, FY 1977-80

Service	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Navy	841	887	1,201	885	897	940
Jet	(481)	(443)	(527)	(375)	(458)	(458)
Prop	(226)	(273)	(385)	(295)	(289)	(267)
Helo a/	(134)	(171)	(289)	(215)	(150)	(215)
USMC	506	455	644	470	522	608
Jet	(201)	(162)	(225)	(165)	(209)	(246)
Helo a/	(305)	(293)	(419)	(305)	(313)	(362)

a/ Proposed to be conducted by Army beginning in FY 1979.

The final program of Undergraduate Pilot Training is Air Force training of jet pilots. All Air Force pilots, except helicopter pilots trained in the Army program, are trained in this jet program at the present time. The standard course length is 48.5 weeks. Forecasted attrition for FY 1979 is 11 percent, not including that which occurs in the flight screening of the Flight Familiarization Training program. Load data are shown in the following table:

Training Inputs, Output, Loads, Air Force Undergraduate Jet Pilot Training, FY 1977-80

	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Active	1,161	992	1,667	1,000	1,224	1,680
Reserve	21	22	24	21	21	21
Natl Guard	73	71	82	69	71	72

At the conclusion of Undergraduate Pilot Training, the new pilot is capable of operating an aircraft in such a manner that future training required, in order to accomplish a specific mission, is limited to advanced flight training in aircraft used in operational units and training in the employment of applicable mission weapon systems.

Undergraduate Navigator Training

The Navy has trained its own personnel and Marine Corps personnel to become Naval Flight Officers. The Air Force has trained its own personnel as navigators. The duties of Naval Flight Officers and Air Force navigators are not precisely the same because of mission differences. But at the undergraduate level, they are sufficiently similar that they are referred to collectively in this report as "navigators". (The Army does not train or use navigators.) Some navigator training has recently been consolidated, as is discussed later.

The Undergraduate Naval Flight Officer (NFO) training program is a building block training program. The training commences with Environmental Indoctrination (4 weeks for officers) or Officer Candidate School (12 week for officer candidates) where the student is provided basic aeronautical and aviation physiological foundation knowledge. After completing this phase, the student enters the Basic phase. This 15.6 week course provides the student with the basic skills and knowledge needed to safely navigate, communicate, manage aircraft systems, and to describe two-plane formation maneuvers. Successful completion of Basic qualifies students for entrance into Interservice Undergraduate Navigation Training (22 weeks) conducted at Mather AFB, California (described in a later paragraph), or the Navy intermediate phase. The intermediate phase (5 weeks) expands the knowledge gained in Basic and requires higher skill and performance standards. Practical flight skills are developed in the ID23 computerized navigation/communications training device and the 2F101/2F90 simulators, the T-2C aircraft for jet acclimatization and high-speed navigation and the T-39 aircraft for jet instrument navigation. After successful attainment of the performance standards, the students proceed to one of the following advanced naval flight officer training phases which provides specific skills and knowledge: Radar Intercept Officer (17.4 weeks), Tactical Navigation (10.7 weeks), and Airborne Tactical Data Systems Officer (10 weeks).

The Air Force Undergraduate Navigator Training courses include academic instruction in navigation procedures and equipment and practical simulator and in-flight training involving navigation and other flight crew duties under a variety of mission conditions. Course length in FY 1979 will be 33 weeks, three weeks less than in FY 1974.

The advanced segment of Undergraduate Navigator Training for Naval Flight Officers destined for the anti-submarine warfare community was merged into the Air Force program at Mather Air Force Base in California in the last half of calendar year 1976. This involves Naval Flight Officers in the program already described destined to become navigators of multi-engine aircraft. This consolidation was worked out by agreement between the Departments of the Navy and Air Force following a study conducted by the Interservice Training Review Organization.

The consolidation also involves collocation of the Marine Corps enlisted navigator training program, which provides crewmen for the

KC-130 aircraft. As this program does not produce Naval Flight Officers, it is omitted from the next table, although included in Flight Training totals.

Undergraduate Navigator Training provides sufficient skills and knowledge so that further training for the newly rated navigator can be limited to advanced flight training in operational aircraft and training in employment of applicable weapons systems. Training load data for Undergraduate Navigator Training are shown in the following table:

Training Inputs, Output, Loads, Undergraduate Navigator Training, FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Navy						
Active	494	435	719	450	426	426
USMC a/						
Active	126	94	150	100	94	86
Air Force						
Active	393	372	644	550	385	420
Reserve	3	3	11	9	7	3
Natl Guard	17	17	67	60	43	17
DoD						
Active	1,017	884	1,513	1,100	905	932
Res/Gd Tot	20	20	78	69	50	20
DoD Total	1,037	901	1,591	1,169	955	952

a/ Does not include Marine Corps enlisted navigator loads (22 in FY 1979 and 19 in FY 80) which are included in Flight Training totals.

Other Flight Training

This category covers miscellaneous other types of flight training as described below by Service. Load data are displayed in the following table:

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	126	174	1,908	1,907	185	191
Reserve	9	17	109	109	14	7
Natl Guard	25	28	210	210	26	26
Air Force						
Active	372	318	2,019	1,873	430	485
Reserve	3	3	10	10	3	3
Natl Guard	3	3	6	5	2	2
DoD						
Active	498	492	3,927	3,780	615	676
Res/Gd Tot	40	51	335	334	45	38
DoD Total	538	543	4,262	4,114	660	714

The Army includes in this category courses for instructor pilot and specific pilot qualification courses in various aircraft. Most of the courses are short, in the range of two to seven weeks.

The Navy and Marine Corps do not report training in this category, noting that postgraduate flight training is conducted under operational command auspices. The Air Force Other Flight Training workload is limited largely to instructor courses for pilots and navigators and some specialized courses conducted by the Air Training Command in such fields as electronic warfare. Most Air Force postgraduate flight training is conducted under operational command auspices.

In each of the Services, graduates of undergraduate pilot and undergraduate navigator training receive supplementary training in the specific aircraft they will be flying on operational missions. Emphasis is placed on crew training and performance under conditions which would be encountered in combat. In the Army most of this training is provided as part of normal unit training by the operational unit to which the new pilot is assigned. In the other Services, this additional training is provided by Navy fleet readiness squadrons, Marine combat crew readiness training squadrons, and Air Force combat crew training squadrons. As an exception, centrally-conducted Army advanced flight training loads are included within Other Flight Training loads. However, most such training is considered "crew and unit training" by the Navy, Marine Corps, and Air Force and is not included in the loads of this report.

Determination of Requirements for Rated Officers

Flight Training rates are developed by comparing projections of future requirements for rated officers with projections of the future status of inventories of rated officers. Due consideration is also given to the need to have sufficient aviators on hand, in appropriate grades, to fill positions in operational units. Requirements for rated officers include both the numbers needed to man the force in peacetime and the additional increment needed initially under approved mobilization scenarios when war breaks out to man and sustain the force until training output can be expanded. For analytical purposes, aviator requirements are divided into two parts: unit and individuals. Requirements for aviators for each of these categories are computed to meet both (1) peacetime needs and (2) wartime mobilization needs under approved mobilization scenarios.

Unit requirements represent the number of rated officers needed to carry out operational, training, and management activities for programmed units. Each such authorized position (that is, military space or billet) requires a rated officer as an incumbent in order to carry out the functions of the job, either because the job involves flying duties (i.e., "operational flying" positions as defined for purposes of the Aviation Career Incentive Act of 1974) or requires flying experience. Other positions which may be occupied by rated officers for career

broadening or similar purposes, but which do not require rated officer incumbents for accomplishing the duties, are not included. Unit requirements have three subcomponents: force, training, and supervision.

Force requirements are the positions required to man and operate the Services' force aircraft. The number of force positions is a product of established crew ratios, or the number of crews per aircraft, which in turn take into account workload (flying hours) and readiness factors and the amount of mission flying and unit flight training which is necessary.

Training positions include the flyers who are conducting formal flight training.

The supervision component is made up of officer positions entailing actual supervision of flying and flight-related activities and the performance of staff jobs which require the expertise of a rated officer. These positions are subject to continuous scrutiny to assure that rated requirements are valid.

Individual requirements include the transients, students and other individuals needed to make it possible to provide for reasonable manning of positions in units.

Rated Officer Inventory Projections

Projecting rated officer inventories into the future must be based on historical experience, current judgment, and an appraisal of how the officers will react to conditions in the future (i.e., pay, morale, state of the civilian economy, civilian airline hiring plans, family satisfaction with service life, etc.). These estimates are projected for at least five years in the future. Comparisons of total force inventories of rated officers are then made against the computed total force requirements, and training rates for the entire five-year period are adjusted. This process is repeated each year so that adjustments can be made in training rates based on changes in requirements and updated inventory projections. This continuing process of adjustment is necessary to insure that the correct number of trained rated officers will be available in the future without large and expensive fluctuations in training rates.

Training Rate Adjustments

When a comparison of requirements and inventories discloses a shortage or overage of projected rated officers, training rates are adjusted upward or downward in order to bring the program back into balance. For example, if projected FY 1983 pilot requirements exceed projected inventories by 1,000, an increase in training rates (that is,

output or production) of pilots of 250 per year starting in FY 1979 may be appropriate. Inputs into the training program would start in FY 1[illegible] in order to obtain the first increase in desired output in FY 198[illegible]. This reevaluation process is repeated at least once each year, with adjustments made as necessary to avoid wide fluctuations in loads.

Determination of Training Loads

The process described above, through continuous updating of the comparison between projected rated officer requirements and inventories, leads to a requirement for phased output from the flight training establishment. The desired annual output, considering the anticipated attrition rates and the planned course lengths, as discussed in the preceding sections on the various types of flight training, establishes the size of the input necessary to achieve the target output. Training loads are then calculated, using these factors, to determine the average number of students to be on hand during the training year. For FY 1979-80, the currently recommended loads are those displayed previously in this chapter.

As noted earlier, the Defense Audit Service currently is auditing all Service aviator requirements and inventory data to validate the increased output levels and loads proposed by the Services for the out-years. On this basis, outputs and loads for FY 1980 and beyond will be confirmed or adjusted during the next few months.

VII

PROFESSIONAL DEVELOPMENT EDUCATION

General Description

The purpose of Professional Development Education is to provide training and education to career military personnel to prepare them to perform the increasingly complex tasks which become their responsibilities as they progress in their military careers. Whereas Specialized Skill Training is directed toward specific job skills, Professional Development Education is concerned with broader professional development goals in such subjects as military science, engineering, medicine, and management. Professional Development Education is conducted at both military and civilian institutions. This category includes senior enlisted leadership training in recognition of the broad professional content of these courses, as opposed to the narrower skill-oriented training typical of most enlisted training programs. However, most of the programs in this category are for professional development of officers.

Training loads for FY 1973-81 are as shown in the table on the following page.

Total Professional Development Loads, FY 1973-81

Service Component	FY 73	FY 74	FY 75	FY 76	FY 77	FY 78	FY 79	FY 80	FY 81
Army									
Active	5,849	5,868	4,480	4,023	3,424	3,365	3,331	3,360	3,358
Natl Guard	58	69	68	94	83	90	90	90	90
Reserve	87	103	80	125	55	63	60	63	63
Navy									
Active	5,112	5,723	4,081	2,767	1,762	1,914	1,857	2,009	1,997
Reserve	12	24	15	11	10	8	8	8	8
Marine Corps									
Active	1,874	1,079	980	801	697	721	755	755	715
Reserve	52	16	15	15	18	23	23	23	23
Air Force									
Active	5,596	4,889	4,704	4,491	4,324	4,447	4,391	4,384	4,303
Natl Guard	92	39	39	39	42	43	42	42	42
Reserve	68	49	70	82	84	41	39	39	39
DoD									
Active	18,431	17,559	14,245	12,082	10,207	10,447	10,334	10,508	10,373
Gd/Res Total	369	300	287	316	242	268	262	265	265
DoD Total	18,800	17,859	14,532	12,398	10,449	10,715	10,596	10,773	10,638

The total loads in the table show a considerable disparity among the Services in amounts of Professional Development Education. This disparity is more apparent than real, and is related mainly to somewhat different ways of categorizing Service education programs. The Air Force, for example, conducts an Enlisted Leadership Training Course, whereas the Navy does not, although it provides advanced technical training carried under Specialized Skill Training.

The first three subcategories of Professional Development Education are officer professional military development programs. These programs are at three levels: basic, intermediate, and senior.

Education in the military school system is fundamental to the development of military officers who are fully qualified to perform duties of high responsibility in both war and peace. In most non-military professions, growth in ability and knowledge is gained through experience. In the military, opportunities for full practice of the profession are limited to wartime, and even those officers with combat experience have not had the opportunity for thorough exercise of the decision skills they would require, for example, in a war in the Middle East. The military school system serves partially to fill this shortfall by educating the military officer in the skills and knowledge needed to perform his duties in a variety of locales and situations, both in peacetime and wartime.

In addition to their regular courses for active force officers, most schools in this category present nonresident courses and short seminars. Large numbers of Reserve Component officers and other military students are provided instruction through correspondence courses.

Basic Officers Professional Schools

The Marine Corps and Air Force conduct basic officer courses for officers with some experience in operational units which are Service-wide in scope and are, therefore, carried in this report under Professional Development Education. The Army and Navy conduct courses which are at a similar level, but which are oriented toward specific skills (e.g., the Navy's Surface Warfare Officers Course) or somewhat broader skills within a specific part of the Service (e.g., the Army's Armor Officer Advanced Course). The Army and Navy courses, because of their specialization, are treated in this report as part of Specialized Skill Training.

The Marine Corps Amphibious Warfare Course is designed to prepare officers in the grade of captain for duties in battalion or squadron command or on regimental-level staffs. The course length is 39 weeks. The Air Force Squadron Officer School is an 11-week course designed to prepare selected captains, after completion of some active service experience, for command and staff duties appropriate to their grade.

The training load data for FY 1977-80 associated with these Marine and Air Force courses are displayed in the following table.

Training Inputs, Output, Loads, Basic Officers
Professional Schools, FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
USMC						
Active	129	123	182	182	134	134
Reserve	8	8	200	200	8	8
Air Force						
Active	543	557	2,638	2,638	558	558
Reserve	1	2	8	8	2	2
Nat'l. Guard	4	4	21	21	4	4
DoD						
Active	672	680	2,820	2,820	692	692
Res/Gd Total	13	14	229	229	14	14
DoD Total	685	694	3,049	3,049	706	706

Intermediate Service Schools

Each of the Services maintains a Command and Staff College. In addition, the Navy is executive agent for the Armed Forces Staff College, a joint institution sponsored by the Joint Chiefs of Staff with students from all Services. While there are differences in approach and curriculum based on the requirements of the parent Service, each of the courses is designed to prepare officers for command and staff duties in all echelons of their parent Services and in joint or allied commands. A relatively small number of officers from each Service attends one of the Command and Staff Colleges of the other Services; a few attend Allied schools at the same level. Attendance at the Intermediate Service Schools is on a selective basis.

The following table lists the Command and Staff Colleges and their respective course lengths. In addition to the principal courses, the Service colleges individually conduct various courses for Reserve Component officers and a variety of nonresident courses.

Intermediate Service Schools

Schools	Location	Course Length (Weeks)
Armed Forces Staff College	Norfolk, VA	22
Army Command and General Staff College	Fort Leavenworth, KA	38
College of Naval Command and Staff	Newport, RI	42
Marine Corps Command and Staff College	Quantico, VA	43
Air Command And Staff College	Montgomery, Al	43

Another school presently considered to be in the Intermediate Service Schools category is the Defense Systems Management College at Fort Belvoir, Virginia. This is a joint school which conducts a primary 20-week course in management concepts and methods with the major purpose of preparing selected military officers and DoD civilian personnel for assignments in program or project management.

Load data for military personnel attending Intermediate Service Schools is shown in the following table:

Training Inputs, Outputs, Loads, Intermediate Service Schools, FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	888	868	1,777	1,777	774	780
Reserve	34	33	488	488	30	33
Natl Guard	63	64	684	684	64	64
Navy						
Active	167	169	244	240	169	173
Reserve	4	3	72	72	3	1
USMC						
Active	140	143	197	197	143	143
Reserve	6	6	172	172	6	6
Air Force						
Active	515	513	604	617	491	493
Reserve	14	15	127	127	15	15
Natl Guard	14	16	122	122	15	15
DoD						
Active	1,710	1,693	2,822	2,831	1,577	1,589
Res/Gd Tot.	135	137	1,665	1,665	133	134
DoD Total	1,845	1,830	4,487	4,496	1,710	1,723

Senior Service Colleges

Each of the Military Departments maintains a Senior Service College, or "War College," In addition, there is the National Defense University, consisting of two joint Senior Service Colleges, The National War College and the Industrial College of the Armed Forces, attended by students from all four Services. Senior Service College attendance is on a highly selective basis; students are chosen by Service selection boards from among the most promising officers in the lieutenant colonel/colonel, commander/captain grades.

The common purpose of the Senior Service Colleges is to prepare students for senior command and staff positions at the highest levels in the national security establishment and the allied command structure. The unifying focus is the study of national goals and national security policy. Each of the Service colleges, while concentrating on the employment of the parent Service in the defense mission, also includes the study of the employment of the forces of other Services.

All of the colleges integrate the study of economic, scientific, political, sociological, and other factors into the consideration of national security problems. The Industrial College, in its approach to national security problems, emphasizes the use and management of national resources. The length of the principal courses at the Senior Service Colleges is ten months. Most colleges also conduct shorter special-purpose seminar-type courses, some particularly for Reserve Component officers.

Load data for the Senior Service Colleges are shown in the following table.

Training Inputs, Outputs, Loads, Senior Service Colleges, FY 1977-80

Service / Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	305	294	498	498	265	263
Reserve	19	23	358	358	23	23
Natl Guard	14	19	258	258	19	19
Navy						
Active	164	158	1,596	1,593	157	171
Reserve	2	-	-	-	-	2
USMC						
Active	56	55	61	61	53	53
Reserve	4	6	138	138	6	6
Air Force						
Active	313	307	290	301	274	265
Reserve	8	8	51	52	8	8
Natl Guard	8	8	51	52	8	8
DoD						
Active	838	814	2,445	2,453	749	752
Res/Gd Tot.	55	64	856	858	64	66
DoD Total	893	878	3,301	3,311	813	818

Enlisted Leadership Training

The courses included in this category are intended to provide selected senior enlisted personnel the skills and knowledge needed to assume the responsibilities of the highest non-commissioned officers grades. These courses are the culmination of formal enlisted training and are, for enlisted personnel, analogous to the officer courses discussed in the preceding sections. In addition to such subjects as methods of leadership, human relations, discipline and training, and the administration and employment of military organizations, the senior non-commissioned officer, in these higher-level schools, is given a broader perspective of the role and functions of his or her Service.

Schools, locations and course lengths are shown below:

Schools	Location	Course Length (Weeks)
Army: Sergeants Major Academy	Fort Bliss, TX	22
Marine Corps: Staff NCO Academy	Quantico, VA	6
Air Force: Senior NCO Academy	Gunter AFS, AL	9

Other enlisted leadership training for more junior noncommissioned officers is carried in Specialized Skill Training. This includes command NCO academies, for example. This is more properly skill related for specific types of specialized leadership responsibilities. The senior enlisted leadership training carried here is more properly thought of as professional military education in a broader sense.

Loads for Enlisted Leadership Training are shown below:

Training Input, Output, Loads, Enlisted Leadership Training, FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	166	175	400	396	175	175
Reserve	2	7	16	16	7	7
Natl Guard	6	7	16	16	7	7
USMC						
Active	66	149	1,390	1,268	161	161
Reserve	-	3	95	95	3	3
Air Force						
Active	203	200	1,155	1,155	200	200
Reserve	-	3	15	15	3	3
Natl Guard	5	5	30	30	5	5
DoD						
Active	435	524	2,945	2,819	536	536
Res/Gd Total	13	25	172	172	25	25
DoD Total	448	549	3,117	2,991	561	561

Graduate Education Fully Funded, Full Time

The Department of Defense needs military officers with specialized advanced knowledge, at a level attainable only through graduate education, to perform effectively in certain military jobs. The purpose of the graduate education program in each of the Services is to provide graduate-level education in required disciplines to the numbers of officers required to maintain an inventory of officers qualified to fill these jobs. Under the program described in this section, military officers undergo graduate education on a full-time, fully-funded basis. An active service pay back obligation of three-for-one for the period of schooling is required of all officers entering the program, up to a maximum set by the Services. (The Funded Legal Education program established by 10 USC 2004 requires an active service commitment of two-for-one.)

The following table displays training load data for these graduate education programs. All participants are members of the Active Forces.

Training Inputs, Output, Loads, Graduate Education, Fully Funded, Full Time, FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army Active	745	792	1,329	814	808	805
Navy Active	807	945	555	420	902	985
USMC Active	85	100	79	51	115	115
Air Force Active	1,142	1,138	678	691	1,075	1,075
DoD Total	2,779	2,975	2,641	1,976	2,900	2,980

Officer graduate students attend either a civilian educational institution or one of the two Service institutions, the Naval Postgraduate School or the Air Force Institute of Technology, depending upon where the required education can best be obtained. Curricula in the latter two institutions emphasize military-unique courses, such as in logistics management or intelligence operations, and military applications in all other courses. While these schools are primarily used by the parent Services (including Marine Corps use of the Naval Postgraduate School), they also educate some students from other Services. The following table displays programmed FY 1979 student loads for these two schools by the parent Services of the students making up the load.

Graduate Education Loads at Service Institutions, FY 1979

	Army	Navy	Marine Corps	Air Force	Total
Naval Postgraduate School	45	714	79	55	893
Air Force Institute of Technology	16	9	1	425	451

Requirements for graduate-educated officers depend upon the number of "validated billets", that is, military positions which have been determined to require an incumbent with graduate-level education in the applicable academic discipline. Each Service has established a system, ordinarily culminating in a board of senior officials in the Service headquarters, which examines the duty prerequisites for each billet nominated for validation and determines if the job does, in fact, require an officer with an advanced degree. (Requirements for included graduate legal education are determined separately; these programs were authorized in 1973 by Public Law 93-155.) The number of validated billets in FY 1979 is displayed in the following table:

Validated Billets, FY 1979*

Army	Navy	Marine Corps	Air Force	DoD
4,900	5,000	461	9,009	19,370

*Subject to subsequent review.

Through intensive review of job requirements, the number of validated billets have been reduced by approximately 4,400 positions since FY 1975. As the result of intensive management of all aspects of Service programs, training loads in the fully-funded graduate education program will be about a fourth smaller in FY 1979 than in FY 1975. All aspects of the program will continue to receive close examination and careful management.

Other Full Time Education Programs

In addition to the Professional Development Education programs already described there is a variety of other full time programs tailored to meet the particular needs of the Services (Health Professions Education programs are discussed in a separate section at the end of this chapter).

Several programs have been designed to permit selected individuals an opportunity to work toward associate, baccalaureate or advanced degrees. These programs benefit the Services in several important ways: they increase the technical qualifications of the individuals in the

program; they improve the general educational levels of Service personnel; and they provide career retention and recruiting incentives to outstanding personnel. In addition, to the extent possible, personnel in advanced education programs are later used to satisfy validated requirements and hence reduce the required student load in graduate education for validated billets.

The degree-completion programs are managed by the individual Military Departments and each has its own selection criteria. However, in general a person is not selected for a program unless the education will enhance his professional development and be of use to the Military Department. All of the programs require a payback from the individual. It should be noted that no graduate degree programs included here are fully funded.

Short-course training provides the Military Services with needed skills in a wide variety of scientific, administrative and other fields. These programs are selected to train personnel in job-oriented skills which can best be acquired through abbreviated courses. Accounting, traffic management and aviation safety are examples of skills involved. Some of this included training is conducted in DoD schools, the remainder in civilian institutions.

The following table displays load data for this category;

Training Inputs, Loads, Other Full-Time Education Programs, FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	964	855	2,707	2,187	865	865
Navy						
Active	433	449	2,327	2,365	436	517
Reserve	4	5	59	59	5	5
USMC						
Active	221	151	109	67	149	149
Air Force						
Active	491	559	6,916	6,921	551	551
Reserve	11	13	265	265	11	11
Natl Guard	11	10	175	175	10	10
DoD						
Active	2,109	2,014	12,059	11,540	2,001	2,082
Res/Gd Tot	26	26	499	499	26	26
DoD Total	2,135	2,042	12,558	12,039	2,027	2,108

Health Professions Education

This subcategory is made up of a wide variety of courses for personnel of all health professions -- physicians, dentists, nurses, medical administrators, etc. The majority of the courses offered are conducted in military facilities, and vary in length from a few days to a full year. Some training is conducted at civilian medical institutions, including, in the case of the Army, some advanced degree programs. The purpose of Health Professionals Education is to expand the skills of military medical personnel and to provide them timely information on the latest techniques in their fields. Educational programs connected with the acquisition of health professionals is carried in this report under Officer Acquisition Training.

The following table shows load data for Health Professions Education.

Training Inputs, Outputs, Loads, Health Professions Education, FY 1977-80

Service Component	FY 77 Load	FY 78 Load	FY 79 Input	FY 79 Output	FY 79 Load	FY 80 Load
Army						
Active	356	381	13,923	13,920	444	472
Navy						
Active	191	193	46	92	193	163
Air Force						
Active	1,117	1,173	1,900	1,900	1,242	1,242
DoD Total	1,664	1,747	15,869	15,912	1,879	1,877

The higher Air Force loads are mainly the result of different methods of accounting for medical residents. The Air Force centrally manages the training of residents and counts them as students; the Army and Navy consider residents as being in on-the-job training status and do not include them in student loads. Actually, the programs of the three Services are not markedly different in character.

VIII

RESERVE COMPONENTS TRAINING

In addition to training members of the active forces, the Service training establishments also train members of the Reserve Components. Reserve Component training, as part of individual training and education, involves Reservists and Guardsmen who are on active duty for formal school training. It does not include training of Reserve Component members provided under the following circumstances:

- Training received while members are on extended active duty (this training is included in active force aggregates);
- Training conducted by the Reserve Components themselves;
- Training received on annual active duty, except if provided through courses conducted by the active training establishment;
- Any training received while the individual is not in an active military status; as a minor exception, some Reserve and Guard technicians attend military schools in Civil Service status.

The purpose of this chapter is to summarize the amount and types of training of Reservists and Guardsmen which are conducted by the active training establishments. The training loads discussed in this chapter are included within the loads attributed to the various Reserve Components in the previous chapters.

Training of members of the Reserve Components will comprise approximately 11.7 percent of all individual training and education in FY 1979. Training loads for each of the Reserve Components for each of the major categories of training for FY 1979 are shown in the following table.

Training Loads, Reserve Components, FY 1979 a/ b/

Component	Recruit	One-Station Unit Training	Officer Acquisition	Specialized Skill	Flight	Professional Development	Total
Army Reserve	1,787	907	122	3,035	48	60	5,959
Army National Guard	2,456	4,824	42	4,293	88	90	11,793
Naval Reserve	289	-	40	654	-	8	991
USMC Reserve	1,693	-	309	1,049	-	23	3,074
Air Force Reserve	362	-	1	750	32	39	1,184
Air National Guard	679	-	-	1,629	121	42	2,471
Total, Reserve Components	7,266	5,731	514	11,410	289	262	25,472

a/ Training of ROTC cadets and Health Professions Scholarship Program participants not included.
b/ Loads in this table are a summary of Reserve Components loads displayed previously in this report, and are not additive to them.

The following table summarizes load data for entry-level Reserve Component basic qualification training for FY 1979.

Enlisted Entry-Level Training, Reserve Components, FY 1979

	Inputs	Outputs	Loads
Recruit Training	39,310	35,297	7,266
Initial Skill Training	49,023	43,977	7,890
One-Station Unit Training	25,931	23,112	5,731
Totals	114,264	102,386	20,887

Entry-level training of Reserve Component members accounts for 15.2 percent of all Recruit Training, 12.2 percent of all Initial Skill Training (Enlisted), and 25.3 percent of all Army One-Station Unit Training programmed in the Department of Defense for FY 1979.

Although entry-level training for enlisted personnel makes up about 82 percent of total Reserve Component training loads, Reserve and Guard officers and enlisted personnel beyond the initial entry stage also are trained by the active establishment. The majority of this training is at the more advanced levels of Specialized Skill Training, and fills the same demands for skill progression or new equipment training that these types of training provide for active members. Reserve Component participation in Flight Training is relatively minor, since most aviator requirements in Reserve Component units are filled by experienced aviators who join after extended service in the active components. Reserve Component participation in the professional military schools portions of Professional Development Education accounts for about 6.5 percent of total DoD officer training at the basic, intermediate and senior levels and about 4.5 percent of Enlisted Leadership Training.

Reserve Component personnel participate in a variety of nonresident courses sponsored by Service Schools; Reservists and Guardsmen make use of these training opportunities on the same basis as active personnel. For many Reserve and Guard officers, consideration for promotion depends upon successful participation in Professional Development Education programs.

Beyond the training covered in the training loads, the active training establishment makes other valuable contributions to the state of training of the Reserve Components. Perhaps the most important is realized through former active members who join the Reserve Components after having been trained on active duty. The Reserve Components also receive graduates of Army and Air Force ROTC who are not called to extended active duty.

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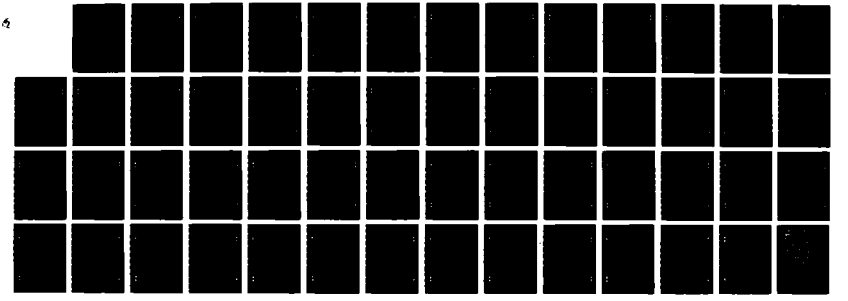

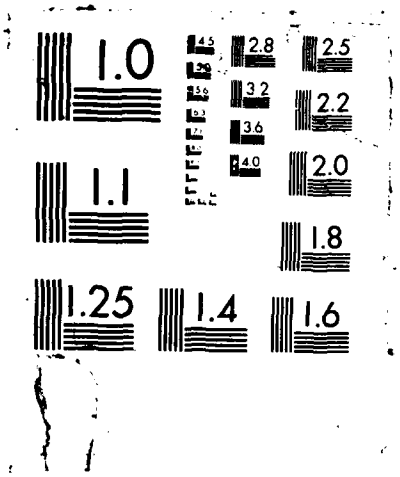
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In summary, training of members of the Reserve Components forms a significant portion of the workload of the active training establishment. Particularly at the entry level, this training is indispensable to the readiness of individuals and organizations of the Reserve Components and to the realization of the Total Force policy.

IX

TRAINING MANPOWER

General

Manpower associated with the individual training missions in the Department of Defense can be divided into two parts: first, the trainees and students being trained, and, second, the military and civilian manpower which conducts and supports the training. These two classes of manpower are discussed and explained in this chapter.

Trainees and Students

Manpower undergoing training in the Defense training establishment is defined and quantified in three different ways, each of which serves a somewhat different purpose with regard to manpower accounting and resource allocation.

1. Training Loads. These are the "military training student loads" which are detailed in Chapters III through VII of this report -- the average number of military trainees, students and cadets of each Service and component in training during a given fiscal year, which is subject to annual congressional authorization. Training loads include all military manpower of a given Service or component who are undergoing individual training, regardless of whether the training is conducted by the parent Service, one of the other Services, a DoD school, or by an agency or institution outside the Department of Defense, such as a civilian college or university. Training loads also include all military personnel in training regardless of their assignment status. Some trainees and students are assigned to the training activity; others are attending training in a temporary duty (TDY) or temporary additional duty (TAD) status while remaining assigned to their parent units; still others are attending while in transit from one permanent assignment to another.

Since training loads are an annual average and most courses are much shorter than a year in length, the actual number of students and trainees who enter training, and the number who graduate, is considerably greater than the training load. For example, the total programmed training load for Recruit Training in FY 1979 is less than 48,000, yet over 330,000 persons are to enter Recruit Training and about 300,000 are to graduate.

2. Training Workloads. The total number of trainees and students undergoing training within DoD includes some trainees and students of foreign nations, DoD civilian employees, and members of other departments and agencies of the U.S. Government, notably the Coast Guard. In addition, many U.S. military students and trainees are trained by a Service

other than their own. Consequently, the average number of students being trained by a given Service, or its training workload, usually differs from its training load. For example, the Marine Corps has a programmed Flight Training load of 638 in FY 1979; however, since the training is conducted by other Services, its Flight Training workload is zero. On the other hand, because the Navy trains many personnel from other Services and Coast Guard and foreign students as well as most of its own students, the Navy's Specialized Skill Training workload is higher than its training load.

Since training workload, in conjunction with other applicable considerations, is the major determinant of the resources (manpower, funds, materiel and facilities) required to conduct training, it, rather than training load, is appropriately used in considering the allocation of resources to a Service or a training activity. Programmed training workloads for each of the Services in FY 1979 are displayed in the following table.

Training Workloads, FY 1979
(Thousands)

Category	Army	Navy	Marine Corps	Air Force	DoD
Recruit	14.9	12.3	10.7	9.9	47.8
Officer Acquisition	4.8	5.4	0.5	5.2	15.9
Specialized Skill	44.1	45.9	7.5	29.3	126.8
Flight	1.2	2.0	-	3.3	6.5
Professional Development Education	1.8	2.3	0.5	3.8	8.4
One-Station Unit Training	22.6	-	-	-	22.6
Total	89.4	67.9	19.2	51.5	228.0

3. Students, Trainees, and Cadets. In the Individuals accounts of the Defense Manpower Requirements Report, military manpower is included for each Service as "Trainees and Students" and (except for the Marine Corps) "Cadets". Conceptually, this manpower represents the number of military trainees, students, cadets and midshipmen programmed to be assigned (PCS as opposed to TDY/TAD) for training on the last day of a given fiscal year. In the Navy, this manpower is estimated on the basis of average load, adjusted for seasonal differences discussed in Chapter III as well as for other considerations. Student, trainee, and cadet manpower is similar to training load in that both represent military members of the reporting Service in training status. Nevertheless, there are substantial differences in the way the amount of manpower in these two manpower aggregations is calculated, with the result that the totals are seldom the same. The major reasons for these differences are:

- Training loads are manyears in training status, as has been mentioned, whereas trainees, students, and cadets are end-strengths, or

numbers in training on the last day of the fiscal year. Trainee, student, and cadet numbers are thus affected by the seasonality of enlistment patterns, described in Chapter III, while the element of seasonality is evened out in training loads.

- Training loads include students attending training in a temporary duty (TDY or TAD) status as well as those attending in a PCS status. In the Defense Manpower Requirements Report TDY and TAD students are carried in the categories of their parent units. In addition, some individuals attending training while in transit from one permanent assignment to another are included in training loads but are classified as "Transients" in the Defense Manpower Requirements Report.

Training loads are a more accurate measure of the amount of training which is needed to meet military requirements then are the categorizations; "trainees," "students," and "cadets."

Manpower in Support of Training

Military and civilian manpower is required to accomplish the individual training mission. This manpower conducts and supports instruction, operates training bases and facilities, maintains training equipment, produces training aids, provides personal and community services to students, trainees, and other military members, plans and manages training, and performs all the other tasks necessary to conduct and support individual training. This manpower is discussed in the following paragraphs.

Manpower in support of training is accounted for in the Defense Manpower Requirements Report in several different Defense Planning and Programming Categories (DPPC). The purpose of this section is to bring together total manpower in support of training and relate it to the general functions it performs.

The DPPC Individual Training has sometimes been used to represent manpower in support of training. However, some manpower in Individual Training does not support the training workloads, and a considerable amount of manpower in other DPPC's exists primarily to support the individual training mission. In the following paragraphs manpower in the DPPC's which contribute to the support of individual training -- that is, the execution of the training workload -- is analyzed, by Service, to remove those portions not attributable to individual training and to derive numbers reflecting total manpower in support of individual training. The term "training-attributable" is used to describe manpower which supports the individual training workload; the term "non-training" is used to describe manpower which supports other missions not properly attributed to individual training. All DPPC's are in the aggregation Support Activities unless otherwise noted.

The following adjustments are made to applicable DPPC's to provide for accuracy in accounting for manpower in support of individual training:

- Manpower supporting ROTC programs is removed from Individual Training in all Services, since ROTC students, not being military members in an active status, are not included in training loads.

- Manpower in DPPC's outside Individual Training which supports the individual training mission, such as allocations of base operating support manpower which supports training activities on bases under control of other functional commands, is added in.

Military trainees, students, and military training staff members and their dependents are entitled to care in military medical facilities; a portion of medical manpower is therefore in support of individual training. However, only the Air Force has undertaken to estimate separately the portion of medical manpower which supports its training establishment. This Air Force effort was facilitated by the fact that Air Force training is largely located on single-function bases; a larger portion of Army and Navy training is conducted at bases with multiple functions. Army and Navy medical accounting systems identify patient workload only in such broad categories as "active duty Army" and "dependents of active duty Navy" and not by the functions, such as training, with which the patients are associated.

The Air Force estimates its medical manpower in support of training for FY 1979 as follows: military, 2,600; civilian, 600. A rough approximation of medical manpower in support of training in the Department of Defense as a whole can be made if it is assumed that the relationship between the number of medical personnel and its supported population (defined as training loads plus military manpower in support of training) is the same for the other Services as it is for the Air Force. In the absence of specific data, this appears to be a reasonable assumption, although not one which is subject to verification from current accounting systems; other methods of allocation will give different answers. Using this assumption, total DoD medical manpower in support of training in FY 1979 can be estimated at about 10,400 military and 2,400 civilian spaces. However, because of the very tentative nature of these estimates, medical manpower has not been included in the tables in this chapter which describe manpower in support of training.

The net effect of the adjustments described above provides an accounting for total military and civilian manpower in support of training and arrays it by the major functions it performs. Data are shown for FY 1977, 1978, and 1979.

Army Training Manpower. Army manpower in support of individual training is displayed in the following table.

Army Manpower in Support of Training
(End Strengths, Thousands)

DPPC/Functions	FY 77 Military	FY 77 Civilian	FY 78 Military	FY 78 Civilian	FY 79 Military	FY 79 Civilian
Individual Training	45.2	13.7	41.5	13.0	38.8	12.1
Less ROTC	- 2.7	- 0.6	- 2.7	- 0.6	- 2.3	- 0.8
Less Non-Training	- 5.2	- 4.2	- 4.7	- 4.5	- 4.4	- 4.0
Plus Training-Attributable in other DPPC's a/	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1
Training-Attributable	37.4	9.0	34.2	8.0	32.2	7.4
Base Operating Support Training-Attributable	8.9	14.9	8.4	12.7	7.3	12.1
Management Headquarters Training-Attributable	0.2	0.3	0.2	0.3	0.3	0.3
Total Training-Attributable	46.5	24.2	42.8	21.0	39.8	19.8

NOTE: In this and subsequent tables in this chapter, totals may not add due to rounding.

a/ Manpower in support of training loads from other DPPC's as follows: Geophysical Activities (Auxiliary Activities) -- Defense Mapping School.

The following adjustments were made by the Army in order to properly identify training manpower.

- Individual Training. Non-training manpower in this DPPC is largely manpower assigned to Army service schools which is engaged in the development of organizational and operational concepts and doctrine and supporting literature for the use of active and reserve operational units. These activities include development of the Army Training and Evaluation Program for operational units, Skill Qualification Tests for soldiers Army-wide, manuals and training techniques for guidance of unit operations and training, the Training Extension Course (TEC) program for instruction of soldiers in the field, etc. Manpower in other activities which do not support individual training workloads is also excluded.

- Base Operating Support. Base operating support manpower at each training installation was allocated between training-attributable and non-training using such workload factors as population profiles, square feet of building space, and maintenance work orders. Since some individual training takes place on installations belonging to non-training commands, base operating support manpower attributable to this training was similarly identified and allocated, and the training-attributable portion was added in.

With the realignment of the elements comprising Individual Training, considerable improvement in comparisons has been achieved. The Defense Audit Service has begun a review of all-Service implementation of the realignment to assure reasonable comparability among Services and time periods.

Navy Training Manpower. Navy manpower in support of training is shown in the following table.

Navy Manpower in Support of Training
(End Strengths, Thousands)

DPPC/Functions	FY 77 Military	FY 77 Civilian	FY 78 Military	FY 78 Civilian	FY 79 Military	FY 79 Civilian
Individual Training	24.8	4.4	28.4	4.4	23.8 [a/]	4.2
Less ROTC	- 0.5	- 0.1	- 0.5	- 0.1	- 0.5	- 0.1
Less Non-Training	- 0.7	- 0.3	- 1.1	- 0.4	- 0.5	- 0.3
Plus Training-Attributable in other DPPC's	*	*	*	*	*	*
Training-Attributable	23.6	4.0	26.8	3.9	22.8	3.8
Base Operating Support Training-Attributable	4.6	5.8	5.2	5.8	5.0	5.1
Management Headquarters Training-Attributable	0.4	0.5	0.4	0.5	0.4	0.5
Total Training-Attributable	28.6	10.3	32.4	10.2	28.2	9.4

* Less than 50

[a/] The Defense Manpower Requirements Report shows 23.6; the Navy later amended this figure to 23.8 which is shown here.

Navy non-training manpower in Individual Training is made up of manpower in such activities as Service-wide promotion examination processing, correspondence course administration, evaluation of fleet operational readiness, and procurement and production of simulators for use outside the training establishment.

Marine Corps Training Manpower. Marine Corps manpower in support of training is displayed in the following table.

Marine Corps Manpower in Support of Training
(End Strengths, Thousands)

DPPC/Functions	FY 77		FY 78		FY 79	
	Military	Civilian	Military	Civilian	Military	Civilian
Individual Training	8.4	0.2	7.9	0.3	7.3	0.2
Less ROTC a/	-0.1	-	-0.1	-	-0.1	-
Less Non-Training b/	-0.2	*	-0.2	*	-0.2	*
Training-Attributable	8.0	0.2	7.5	0.2	7.0	0.2
Base Operating Support Training-Attributable	3.2	1.7	3.1	1.7	2.9	1.7
Management Headquarters Training-Attributable	*	*	*	*	*	*
Total Training-Attributable	11.3	1.9	10.7	1.9	10.0	1.9

* Less than 50.

a/ Marine Corps manpower supporting Naval ROTC program.

b/ Manpower in support of non-resident professional development education and unit level amphibious training (non-load related).

Note: The Marine Corps reports no training-attributable manpower in other DPPC's.

Air Force Training Manpower. Air Force manpower in support of training is shown in the following table.

Air Force Manpower in Support of Training
(End Strengths, Thousands)

DPPC/Functions	FY 77 Military	FY 77 Civilian	FY 78 Military	FY 78 Civilian	FY 79 Military	FY 79 Civilian
Individual Training	19.6	5.9	19.1	5.7	19.8	5.3
Less ROTC	- 1.1	*	- 1.1	*	- 1.1	- 0.1
Less Non-Training	- 0.9	- 0.2	- 1.0	- 0.3	- 1.0	- 0.3
Plus Training-Attributable in other DPPC's	+ 2.9	+ 0.9	+ 3.1	+ 1.0	+ 3.1	+ 0.9
Training-Attributable	20.5	6.6	20.1	6.4	20.8	5.8
Base Operating Support Training-Attributable	8.5	8.1	7.9	7.5	7.8	6.3
Management Headquarters Training-Attributable	0.7	0.5	0.7	0.5	0.7	0.5
Total Training-Attributable	29.7	15.2	28.7	14.4	29.3	12.6

* Less than 50.

The major adjustments to Air Force manpower are as follows:

- Designation as non-training of manpower which administers correspondence courses, base-level off-duty education programs, accelerated copilot enrichment (ACE) program, etc.

- Addition to training-attributable manpower of manpower in other DPPCs such as Security Assistance Activities (Support Activities) which supports Foreign Military Sales training.

The following tables sum up manpower in support of training, as identified in the preceding tables, by the general functions Conduct of Individual Training, Training Base Operating Support, and Management Headquarters. The function Conduct of Individual Training includes the following types of manpower: instructors, instructional support, school/training center staffs, student supervisors and much of student support.

DoD Manpower in Support of Training, Conduct of Individual Training Function
(End Strengths, Thousands)

	FY 77 Military	FY 77 Civilian	FY 78 Military	FY 78 Civilian	FY 79 Military	FY 79 Civilian
Army	37.4	9.0	34.2	8.0	32.2	7.4
Navy	23.6	4.0	26.8	3.9	22.8	3.8
Marine Corps	8.0	0.2	7.5	0.2	7.0	0.2
Air Force	20.5	6.6	20.1	6.4	20.8	5.8
DoD	89.5	19.8	88.6	18.5	82.8	17.2

DoD Manpower in Support of Training, Base Operating Support Function
(End Strengths, Thousands)

	FY 77		FY 78		FY 79	
	Military	Civilian	Military	Civilian	Military	Civilian
Army	8.9	14.9	8.4	12.7	7.3	12.1
Navy	4.6	5.8	5.2	5.8	5.0	5.1
Marine Corps	3.2	1.7	3.1	1.7	2.9	1.7
Air Force	8.5	8.1	7.9	7.5	7.8	6.3
DoD	25.2	30.5	24.6	27.7	23.0	25.2

DoD Manpower in Support of Training, Management Headquarters Function
(End Strengths, Thousands)

	FY 77		FY 78		FY 79	
	Military	Civilian	Military	Civilian	Military	Civilian
Army	0.2	0.3	0.2	0.3	0.3	0.3
Navy	0.4	0.5	0.4	0.5	0.4	0.5
Marine Corps	*	*	*	*	*	*
Air Force	0.7	0.5	0.7	0.5	0.7	0.5
DoD	1.3	1.3	1.3	1.3	1.4	1.3

*Less than 50.

DoD Manpower in Support of Training, All Functions
(End Strengths, Thousands)

	FY 77		FY 78		FY 79	
	Military	Civilian	Military	Civilian	Military	Civilian
Army	46.5	24.2	42.8	21.0	39.8	19.8
Navy	28.6	10.3	32.4	10.2	28.2	9.4
Marine Corps	11.3	1.9	10.7	1.9	10.0	1.9
Air Force	29.7	15.2	28.7	14.4	29.3	12.6
DoD	116.1	51.6	114.6	47.5	107.3	43.7

Trends in Manpower in Support of Training

The following tables show changes in total military and civilian manpower in support of training between FY 1975 and 1979. Manpower for each year is first shown by Service and then by the general functions it performs. Figures for FY 1975 are the same as those used last year in this report to make them definitionally consistent.

Trends, Total Manpower in Support of Training, FY 1975-1979
(End Strengths, Thousands)

	FY 75			FY 79			Change, Total Manpower	
	Mil.	Civ.	Tot.	Mil.	Civ.	Tot.	No.	Percent
Army	55.8	30.4	86.2	39.8	19.8	59.6	-26.6	-30.9
Navy	35.0	11.5	46.5	28.2	9.4	37.6	- 8.9	-19.1
Marine Corps	12.3	2.2	14.5	10.0	1.9	11.9	- 2.6	-17.9
Air Force	40.2	18.8	59.0	29.3	12.6	41.9	-17.1	-29.0
DoD	143.3	62.9	206.2	107.3	43.7	151.0	-55.2	-26.8

As the table shows, military and civilian manpower in support of training is being reduced by 55,200 spaces, or 26.8 percent, between FY 1975 and 1979.

The same data, displayed by the functions Conduct of Individual Training, Base Operating Support, and Management Headquarters, is shown in the following table.

Trends, Total Manpower in Support of Training, FY 1975-79, By General Function
(End Strengths, Thousands)

	FY 75			FY 79			Change, Total Manpower	
	Mil.	Civ.	Tot.	Mil.	Civ.	Tot.	No.	Percent
Conduct of Individual Training	106.0	22.4	128.4	82.8	17.2	100.0	-28.4	-22.1
Base Operating Support	35.5	39.0	74.5	23.0	25.2	48.2	-26.3	-35.3
Management Headquarters	1.8	1.5	3.3	1.4	1.3	2.7	-0.6	-18.2
Total	143.3	62.9	206.2	107.3	43.7	151.0	-55.2	-26.8

As shown in the following table, training workloads are about eight percent lower in FY 1979 than in FY 1975; considered with the reduction of almost 27 percent in manpower in support of training, this implies a notable increase in manpower productivity.

Trends, Training Workloads, FY 1975-79
(Thousands)

	FY 75	FY 79	Change Number	Change Percent
Army	97.9	89.4	- 8.5	- 8.7
Navy	74.9	67.9	- 7.0	- 9.3
Marine Corps	24.3	19.2	- 5.1	-21.0
Air Force	53.5	51.5	- 2.0	- 3.7
DoD	250.6	228.0	-22.6	- 9.0

A similar situation is shown in the following table: relatively greater reductions in manpower supporting training than in training workloads between FY 1977 and 1979.

Total Training Manpower and Training Workloads, FY 1977-79
(Thousands)

	FY 77	FY 79	Change Number	Change Percent
Military and Civilian Manpower in Support of Training	167.9	151.0	- 16.9	- 10.1
Training Workloads	243.6	228.0	- 15.6	- 6.4

The lower level of manpower in support of training in FY 1979 is attributable to a number of management actions:

- Training-attributable Base Operating Support manpower is projected to be lower than in FY 1977.
- Interservice training consolidations in Flight Training are either already in or proposed for FY 1979.
- Support manpower is being reduced through such innovations as the Army's One-Station Unit Training program.
- Staffing standards are being tightened generally in training activities.

Total Training Manpower Detailed by Service and Type of Training

As was noted early in this chapter, training workloads, in conjunction with other factors, are the determinants of the resources required to conduct training. The workload/resource relationship is not a simple one, but depends upon the nature of training and training support involved. For example, Flight Training normally requires a great deal of support manpower for aircraft maintenance; weapons training requires close instructor supervision for safety considerations.

Another factor, economies of scale, is currently important in determination of Department of Defense training manpower requirements. Training installations tend to have relatively high overheads and "fixed" manpower. Until the training base can be realigned to take account of training workloads, the training establishment must operate its existing facilities below optimum capability levels and less efficiently than if fewer installations handled the same workload.

The following table details manpower by Service and type of training in a format compatible with the display of Training Workloads early in the chapter:

Training-Attributable Manpower by
Service and Type of Training, FY 1979
(Thousands)

	Army		Navy		Marine Corps		Air Force		DoD	
Type Training	Mil	Civ	Mil	Civ	Mil	Civ	Mil	Civ	Mil	Civ
Recruit	4.8	2.1	1.7	0.5	3.7	0.8	1.3	0.3	11.5	3.7
Officer Acquisition	1.5	2.6	1.4	1.8	0.6	0.1	1.9	1.5	5.4	6.0
Specialized Skill	22.8	9.4	16.9	3.3	5.0	0.8	14.2	6.7	58.9	20.2
Flight	1.2	0.6	7.9	3.0	0.4	-	10.9	3.5	20.4	7.2
Professional Development	0.6	0.9	0.4	0.8	0.5	0.2	1.0	0.6	2.5	2.5
One-Station Unit Training	8.3	3.3	-	-	-	-	-	-	8.3	3.3
Unallocated *	0.5	1.0	-	-	-	-	-	-	0.5	1.0
TOTAL	39.8	19.8	28.2	9.4	10.0	1.9	29.3	12.6	107.3	43.7

Note: Does not add due to rounding

* Estimated Base Operating Support outside the training establishment in support of training

This manpower, together with student manpower, influences the training funding discussed in the next chapter.

X

TRAINING MANAGEMENT AND FUNDING

General

Chapters III through VII of this report describe and explain the military training student loads requested to be authorized for each military component for FY 1979 and 1980. These student loads represent patterns and levels of training effort which require manpower and other resources. The purpose of this chapter is to describe and explain the resources (other than manpower which is discussed in Chapter IX), funding and costs associated with the conduct of individual training.

In considering training resources, it is important to distinguish between the training loads required by a Service, but conducted in part outside the Service, and the workloads representing training conducted by the Service. As discussed in the previous chapter, the workloads, which represent training conducted by a Service, are the basis for resource requirements (manpower, materiel, facilities, and funds) needed to conduct and support the training which the Service executes. Training workloads and manpower in support of training are discussed in Chapter IX.

Management of Individual Training

Detailed management of individual training is carried out by the four Military Services. Each of the Services, except the Marine Corps, has a training commander immediately subordinate to the Service chief who is responsible for most of the individual training conducted within that Service. Some training is managed directly by the Service headquarters; a few training activities are subordinated directly to the Service headquarters. However, the most prevalent pattern of control is through a training command headquarters which manages most Service military schools, training centers, and other training facilities.

Staff Responsibilities

Within the Office of the Secretary of Defense, staff responsibility for individual training and education policies rests with the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics), with a strong influence over the allocation and use of resources being exercised by the Assistant Secretary of Defense (Comptroller). The staffs of these two offices work closely together in the management of DoD individual training and education. Other OSD offices, such as Health Affairs, Intelligence, and Research and Engineering, participate as appropriate. The OSD role is generally one of policy formulation, allocation of resources, overview of Service training programs, and coordination among the Services.

Within each Service headquarters, a principal staff officer has responsibility for individual training. Other staff members may have primary responsibility for certain types of training, as, for example, a Service Surgeon General for professional medical training. Other staff members have collateral responsibilities for the allocation of manpower and funds to the training function.

Primary responsibility on the Army staff for individual training rests with the Deputy Chief of Staff for Personnel and his subordinate, the Director of Military Personnel Management. Within the Navy, the principal staff officer is the Director of Naval Education and Training, who also is the head of the Navy's training command. Headquarters, Marine Corps, manages training through the Deputy Chief of Staff for Operations and Training and his subordinate, the Director of Training. Commanders of the separate major subordinate training activities report directly to the Commandant of the Marine Corps, dealing with the headquarters training staff. Within the Air Staff, the Director of Personnel Programs, under the Deputy Chief of Staff for Personnel, has staff responsibility for individual training.

Training Commands

The Army, Navy and Air Force each has a command headquarters which manages most of the individual training conducted by that Service.

The Army's principal training command headquarters is Headquarters, Training and Doctrine Command (TRADOC), located at Fort Monroe, Virginia. TRADOC's control is exercised through training installation and school commanders throughout the United States.

The Chief of Naval Education and Training, headquartered at Pensacola, Florida, exercises control, through subordinate functional commanders, of education and training conducted in training centers, schools and programs throughout the Navy.

Headquarters, Air Training Command, at Randolph Air Force Base, Texas, directly controls individual training centers and units.

In no instance do these Service-wide training commands have responsibility for all individual training and education conducted. The Surgeons General are responsible for most health professional and medical technical training, for example, as already noted. The training commands normally do not have responsibility for training conducted outside Major Defense Program VIII-T (Training); nor do they have responsibility for all of Program VIII-T, as, for example, the Service Academies and the Air University.

Training Facilities

Appendix C lists the principal individual training facilities of the four Services for each of the major categories of training. Projected average training loads and training support manpower for FY 1979 are also shown for each facility listed.

Training Funding and Costs

The training costs addressed in this section include all estimated funding in the President's Budget for Fiscal Year 1979, which has been identified as attributable to accomplishment of the training loads requested for individual military training and education. These costs differ from life-cycle costs, which would take account of retirement and other costs which are omitted here as not funded during FY 1979. Life-cycle depreciation costs of training facilities and equipment are not included, although training investment costs estimated for FY 1979, such as certain procurement and construction costs, are included. Training investment in instructor training is included only to the extent that costs are funded in FY 1979.

The costs in this chapter include funding for military pay and allowances for both PCS and TDY/TAD students, allocations of base operating costs in support of training, training-related operations and maintenance costs (including civilian support personnel pay and allowances), certain medical support costs, training investment costs for construction and procurement, and overhead costs attributable to training administration and command. An attempt has been made to exclude non-training-related costs associated with budget requests of training organizations or bases (e.g., maintenance support to tenant activities not having a training function).

For a given Service, the requirement for funding for training arises from two factors: first, the need to fund the pay and allowances of its own military training student loads, regardless of where or by whom the students are trained; and, second, the need to provide for the level of individual training and education effort necessary to meet the Service's commitments to accomplish training for its own and other students.

To facilitate identifying these two needs, student military pay and allowances are separately presented. Military personnel pay and allowances cost estimates are compatible with budget estimates. It is noted in this regard that all dollar figures shown in this chapter are intended to explain and supplement data in budget justification documents by relating the budget to the training activities included in this report. These data, however, do not replace or amend budget justification documents.

Funding estimates used here exclude the funding requested and justified in budget documents for programs not included in the training loads requested and explained in this report (e.g., ROTC).

The following tables reflect the important cost differences among training programs. These differences are due to the mix of training activities needed to accomplish effective and efficient training to satisfy Service manning requirements, and to the mix of training resources devoted to these training activities.

Total load-related training funding, by Service and major training category, is detailed in the following table for FY 1979. Special caution should be exercised in using these costs for comparisons among Services. Differences in missions among the Services, differing operating and training conditions, and differences in the mix of component Service training programs, degrade the soundness of comparisons based on aggregated data such as these.

Total Load-Related Funding of Individual Training
by Service and Type of Training, FY 1979
($ Millions)

	ARMY	NAVY	USMC	Air Force	DoD
Recruit	291 (152)	151 (82)	152 (85)	118 (77)	712 (395)
Officer Acquisition	139 (53)	135 (47)	20 (5)	130 (38)	424 (143)
Specialized Skill	1,137 (517)	993 (428)	201 (99)	650 (241)	2,982 (1,285)
Flight	305 (31)	281 (23)	18 (8)	489 (35)	1,092 (97)
Professional Development Education	141 (90)	81 (44)	27 (16)	160 (107)	410 (258)
One-Station Unit Training	312 (112)	- (-)	- (-)	- (-)	312 (112)
Total	2,326 (956)	1,641 (625)	419 (213)	1,547 (498)	5,933 (2,291)

Note: May not add due to rounding. Figures in parentheses show student pay and allowances included in the figures immediately above.

For purposes here, which are illustrative rather than analytical, student pay and allowance totals for a Service's requested military student training load have been added to totals supporting that Service's workload. This simplification can produce significant distortions in the use of these aggregates for assessing training efficiency (e.g., in the Marine Corps where significant loads are trained by other Services).

Appendix D shows a distribution of funds in the table above by appropriation.

The table above includes substantial segments of cost which are not normally sensitive to significant shifts (say up to fifteen percent) in training load. These include certain command, base, facility, and equipment costs. These "fixed" costs need to be considered in program and budget adjustments because, within a reasonable range of output, they remain approximately the same and do not vary as the training load varies. They change, instead, with decisions to change the manner of accomplishing training, most often through training investment decisions or base realignments.

It should be noted that, because of such factors as the nature of Defense training investment funding, there are often substantial year-to-year fluctuations in funding for fixed costs. These costs are termed "fixed", not because they do not change from year to year, but because their changes characteristically are not "variable" with changes in workloads from period to period. Funding of these costs reflects significant increases, however, for years in which there are major procurements of, for example, simulators, aircraft, or construction in support of training.

Thus, the proportion of total funding any year which is attributable to fixed costs differs significantly among the Services and among categories of training; the proportion in the short run, however, is seldom less than one-third of total cost. This has important implications for the extent of funding adjustments appropriate to changes in the level of activity or size of a training program. Other things equal, if training funds are to be adequate for the needs of a reduced program, they must be reduced by a smaller proportion than the program loads in order to account for fixed costs. By the same token, program increases, within reasonable capacity limits, may not require a proportional increase in total program funding, and program efficiencies often produce resource reductions indpendent of workload changes.

Training costs are affected by inflation, both because of price rises for goods and services and because of the pay of the military and civilian personnel involved as students, instructors, and support. Some training program costs are strongly affected, in addition, by energy cost increases. Flight Training, for example, has been affected by the increased costs of aircraft fuels. However, new efficiencies in Defense training may help to offset the impact of price increases.

All of these factors contribute to the challenge confronting the Department of Defense for further improvements in management of training, for further improvements in utilization of trained manpower resources, and for aggressive implementation of initiatives and innovations that promise further improvements in the quality and efficiency of training.

XI

TRAINING IMPROVEMENTS

General

The purpose of this chapter is to discuss some of the actions being taken by the Department of Defense to make individual training more effective in producing qualified graduates or more efficient in its use of resources. The chapter discusses joint training, measures of training effectiveness, and the use of training technology.

Interservice and Joint Training

Interservice training is training performed by one Service for one or more of the other Services; joint training is that conducted in a school with a multi-Service faculty, usually operating under a Defense-wide charter. The distinction is not important for the purpose of this report, since both types of training act to lessen duplication of training among the Services and to make better use of resources. "Joint training" will therefore be used in this report to describe all cooperative training arrangements among the Services.

Interservice and joint training arrangements have existed for many years, but systematic efforts to increase the amount of those types of training have been in effect for only about five years. Essentially, each Service historically has been responsible for training its own members to satisfy its own requirements. To carry out this responsibility, each Service has developed and maintained training bases, activities and programs to meet its own requirements. Until recently, with some exceptions, little emphasis has been placed on the potential for structuring training systems which are usable by other Services. The major exception has been Navy training of Marines, particularly in Flight Training and other aviation-related skills.

Advantages and Limitations of Joint Training. Significant efficiencies in faculties, staffs, and support establishments, and in operating costs, may be realized by reducing the total number of training activities and combining them into fewer and larger organizations. Another advantage of consolidation is better utilization of equipment and systems required to support courses of instruction. Joint training also stimulates the interchange of new training ideas and methods.

With regard to the practical limitations to the use of joint training, it is preferable and cost effective for each Service to provide the first phase of training to its own new members in order to orient and motivate them to the unique roles and missions of that Service and to inculcate the Service's standards, customs, and traditions. This is accomplished in Recruit Training and Officer Acquisition Training. For practical purposes, then, joint training is limited to Specialized Skill Training, Flight Training and Professional Development Education; to a degree, the uniqueness of Service roles and missions are also a limiting factor in these types of training.

Beyond this consideration, another limitation to the extension of joint training is that Service training facilities are sized, in many cases, to accommodate only their own students, and consolidating courses or schools may require additional facilities. Other limitations are differing skill requirements among the Services, the diversity of equipment used by the Services, possible excessive travel costs if interservice facilities are not economically located for joint use, and the possibility that a joint training center would not meet Service needs in the event of mobilization for some particular reason.

The general criteria used to determine what training will be conducted jointly are that joint training should not lead to unacceptable loss of training quality or failure to meet valid requirements of the participating Services; that it should not require a capital investment in either facilities or equipment, or other one-time costs, which cannot be amortized over a reasonable period of time; and that the courses under consideration should have sufficient commonality to allow for common-core training or enough common equipment utilization to produce savings.

Mechanisms for Increasing Joint Training. The primary mechanism for increasing joint training within DoD is the Interservice Training Review Organization (ITRO), directed by the training chiefs of the four Services and comprised of interservice committees and working groups. The committees and working groups perform the detailed analysis which leads to decisions on the feasibility of consolidation or other cooperative arrangements among the Services. When the Services cannot reach agreement on an issue, the potential for consolidation is further analyzed by the Office of the Secretary of Defense and a decision may be recommended to the Secretary of Defense.

Joint Training in FY 1979. The following table shows, for each Service (active and Reserve Components combined), the amount of training it expects to have conducted by one of the other three Services or DoD schools in FY 1979.

Loads Trained by Other Services or in DoD Schools, FY 1979
(Active and Reserve Component, Thousands)

	Trained By Other Service or DoD Schools	Total Parent Service Loads	Percent Trained By Other Services or DoD Schools
Specialized Skill Training			
Army	1.1	39	3
Navy	1.0	38	3
Marine Corps	4.3	11	37
Air Force	1.4	26	5
DoD	7.4	114	6
Flight Training			
Army	-	0.9	-
Navy	0.1	1.3	9
Marine Corps	0.6	0.6	100
Air Force	0.1	2.3	4
DoD	0.8	5.2	15
Professional Development Education			
Army	0.2	3.3	6
Navy	0.3	1.9	16
Marine Corps	0.4	0.8	50
Air Force	0.4	4.5	9
DoD	1.1	10.5	10

The figures above do not include the members of the host Service who are being trained in the same courses with members of other Services. For example, the figures for Specialized Skill Training include Marines being trained as tank crewmen by the Army but not the much larger number of Army trainees in the same course.

Initiatives in Joint Training. The most important current initiative in joint training is in undergraduate helicopter pilot training. The Department of Defense, in both the FY 1977 and FY 1978 President's Budgets, proposed to consolidate all Defense undergraduate helicopter pilot training under Army at Fort Rucker, Alabama, but the proposal was not accepted by the Congress. Since review has reconfirmed that consolidation would save money while producing the required quality pilots, the proposal has been included in the FY 1979 President's Budget. The consolidated program would replace the current system under which the Army trains its own and all Air Force helicopter pilots and the Navy trains its own and those of the Marine Corps. The consolidated program would contain training modules to meet Service-peculiar requirements. Substantial savings are made possible through this consolidation because

of lower operating costs, economies of scale, and the elimination of the need to buy training aircraft and other training equipment in the future to support the separate Navy program.

The following table lists some of the major skill areas or courses which are conducted as joint training.

SELECTED MAJOR COURSES/SKILL AREAS TRAINED IN OTHER SERVICES

Sponsoring Service	Major Interservice Course/ Skill Areas	Other Participating Services
Army	Undergraduate Helicopter Pilot Training	Navy (proposed) Marine Corps (proposed) Air Force Coast Guard (proposed)
Army	Construction Equipment Operator	Marine Corps Air Force
Army	Airborne	Navy Marine Corps Air Force
Army	Artillery	Marine Corps
Army	Armor	Marine Corps
Army	Explosive Ordnance Disposal	Navy Air Force
Army	Redeye Missile	Marine Corps
Army	Satellite Communication Fundamentals	Navy Air Force
Army	Tracked Vehicle Repair	Marine Corps
Army	Security Police Correction Management Training	Air Force Marine Corps
Army	Postal Clerk	Navy Marine Corps
Army	Foreign Language Training	Navy Marine Corps Air Force
Army	Information Specialist	Navy Marine Corps Air Force
Navy	Aviation Maintenance	Marine Corps Coast Guard
Navy	Cryptologic Courses	Army Marine Corps Air Force

Sponsoring Service	Major Interservice Course/ Skill Areas	Other Participating Services
Navy	Diving	Army Marine Corps Air Force Coast Guard
Navy	Musician	Army Marine Corps
Navy	Electronic Principles	Marine Corps Air Force
Navy	Cryptographic Maintenance	Marine Corps Air Force Coast Guard
Navy	Teletype Maintenance	Marine Corps
Air Force	Navigator Training	Navy Marine Corps
Air Force	Tempest (Cryptologic Courses)	Army Navy Marine Corps
Air Force	Cryptologic Equipment Maintenance	Army Navy Marine Corps
Air Force	Precision Measurement Training	Army Marine Corps
Air Force	Aircraft Pneudraulic Repair	Army
Air Force	Weather Training	Army Navy Marine Corps
Air Force	Military Dog Handler	Army Navy Marine Corps
Air Force	Law Enforcement	Navy Marine Corps

Sponsoring Service	Major Interservice Course/ Skill Areas	Other Participating Services
Air Force	Fire Control Specialist	Army Marine Corps
Air Force	Nondestruct Inspection	Army Navy Marine Corps
Air Force	Defense Sensor Interpretation and Application Training	Army Navy Marine Corps
Air Force	Air Intelligence Training	Army Navy Marine Corps
Air Force	Lineman Training	Army Marine Corps
Air Force	Professional Comptroller	Army Navy Marine Corps
Air Force	Radio Communications Analysis	Army Navy Marine Corps
Air Force	Voice Processing	Army Navy Marine Corps
Air Force	Cryptoanalysis	Army Marine Corps

Other courses currently under review could provide new interservice training courses during FY 1979. The following courses have been or are being consolidated/collocated during FY 1978.

- o Weather Observer
- o Weather Forecaster
- o Weather Equipment Maintenance
- o Weather Electronic Principles
- o Joint Services Interior Intrusion Detection Systems
- o Military Judges' Courses
- o Military Judges' Seminar
- o Procurement Attorney

Training Improvements for Women

A common course of instruction for male and female basic trainees was instituted by Army in October 1977. The course makes no differentiation between the instruction given either sex and the criteria for graduation are identical. This identical training will enable both men and women to participate equally in follow-on training and unit defense should it become necessary.

Measuring Effectiveness of Military Training Programs

The FY 1978 Report of the Senate Armed Services Committee stated that "the fiscal year 1979 Military Manpower Training Report should include a list and description of the major tests to assess training effectiveness for each type of training."

As stated in the FY 1978 Military Manpower Training Report:

> The sole objective of individual training for military personnel is to produce knowledgeable, disciplined, dedicated service members who are capable of functioning effectively in the military job structure and contributing to the combat capability and mission readiness of military units. The measure of training effectiveness, then, is the degree to which individual training meets this objective; the ultimate measure is combat success.

The match between the skills learned by the individual in training and those skills he uses on the job is an indicator of the effectiveness of the training--of whether the right tasks are being taught, whether the tasks are relevant to what the individual must do on the job. How well the individual performs these skills on the job is another indicator of the effectiveness of the training--of whether the training is raising the individual to the skill level necessary for him to execute the task effectively on the job, of whether the individual acquires the knowledge, skills, and attitudes to perform effectively on the job.

Effectiveness of training is measured on an individual skill basis and on an organizational readiness basis. Both individual skill data and organizational readiness test data provide information to the training establishment to improve the effectiveness of the training. However, measures of training effectiveness, to be meaningful, must be applied in the context of a particular unit of instruction, course, or, at the largest aggregation, cluster of related courses. There are no global measures of training effectiveness which can be applied to such large aggregations of training as the major training categories presented in the Military Manpower Training Report. The following table summarizes measures of training effectiveness used in the Department of Defense. No one measure of training effectiveness can be used alone as the measure of effectiveness of a unit of training. The measures are interrelated, and are used in various combinations to assess Defense training effectiveness.

TRAINING EFFECTIVENESS MEASURES

MEASURE	To Determine	Method of Data Collection
Job Task Analysis	What tasks are performed on job Under what conditions tasks must be performed How well tasks must be performed Frequency of task performance Which tasks are critical	Direct observation, interviews, doctrine analyses, expert opinions Review by panel of experts and sample of incumbents
End of Training Course Tests	What tasks student can perform How well student performs tasks How well instructional system is delivering intended training	Instructor rating of actual performance of tasks Instructor or machine scoring of performance of simulated tasks Paper and pencil tests of task performance and knowledge
Field Performance Surveys	What tasks are performed on job How well tasks are performed	Supervisors' questionnaire Graduates' questionnaires *Specially designed* supervisory appraisal forms
Field Visits	What tasks are performed on job How well tasks are performed	Observation of task performance Performance-based tests of task performance Interviews of supervisors and graduates
Field Initiated Feedback	What tasks are performed on job How well tasks are performed	Field Commanders' communication to schools on quality and comprehensiveness of training
Promotion Tests	What tasks individual can perform How well individual performs tasks	Performance-based tests of task performance Paper and pencil tests of task performance and knowledge
Unit Training Tests	How well units are able to perform tasks required in wartime conditions	Standardized scenarios of missions to be performed during wartime by a unit

The training effectiveness measures are part of the Instructional Systems Development (ISD) process used by the four Services. Instructional Systems Development is intended to insure that

- Courses are designed to teach only those tasks which, based upon objective field research and analysis of the tasks needed to be performed, the graduate will use and which can most efficiently and effectively be taught in a formal training course.

- Tests, the requisite for graduation, are accurate indicators of the ability to perform the required tasks.

Phase One of the ISD process includes five steps: analyzing the job; selecting tasks for training; constructing job performance measures; analyzing existing courses; and selecting the organizational setting.

Phase Two of the ISD process, the design phase, includes detailing training objectives and tests, describing student entry characteristics, and determining the sequence and structure of the training. The objectives result from the job analysis of what is actually performed in the field. The tests are designed to determine if the students meet each objective rather than how well the students perform in relation to the other students in the course.

The development of the training, Phase III of the ISD process, includes specification of learning activities, the instructional management plan and delivery system, reviewing and selecting available existing materials, and developing and validating new instruction. Validation of the instruction is important in that it insures that the training teaches what it is designed to teach before it is put into operation.

Phase IV of ISD, the implementation of the instruction, includes using the complete management plan and conducting the actual course in its designated setting.

The final phase of ISD is quality control--as long as the training is being offered, the effectiveness of the training is monitored.

- Internal evaluations consist of collecting progress data, process data, performance data, and pertinent data from students, instructors and administrators to insure that the actual learning outcomes equal the intended learning outcomes.

- External evaluations require following graduates of the training program to their job assignments to determine whether they can do the job for which they were trained. Data are collected through job performance measures, questionnaires to supervisors and graduates, and personal interviews. Informal feedback to the external evaluation process includes comments from field commanders on the quality or comprehensiveness of

the training as evidenced by the performance of graduates, results from unit training exercises showing deficiencies in graduates' skills, and performance of graduates on skill qualification tests and skill knowledge tests for promotion.

Specialized Skill Training courses use job task analysis for course design and mixtures of performance-based end-of-course tests, field performance surveys or visits, results of promotion tests and field initiated feedback to measure the effectiveness of the training. Job task analysis is less appropriate for Professional Development Education as Professional Development Education is not directed toward acquisition of specific skills. Professional Development Education is concerned with broader professional development goals in such subjects as engineering, management, and military science and course design objectives and effectiveness measures may be more appropriately determined by panels of experts from the field, the school, and the civilian community.

As the table shows, the Defense training establishment uses measures of effectiveness to insure that its training establishment is doing its job. Measures wherever possible are performance-based. Performance based tests are hands-on tests to determine, for example, whether a nurse can read a blood pressure meter or a rifleman can fire a qualifying score with an M-16. Military training is conducted on a pass-fail basis. If the trainee can perform the required tasks he graduates; if he cannot he is either retrained, enrolled in a different type of training, or discharged. Field follow-up evaluations insure that training is relevant to tasks performed in the field and that graduates can perform the tasks well. Defense continues to strive to improve the effectiveness and economy of the Defense training establishment.

Progress in Training Technology

The Military Services have been the leaders in the development and use of training technology for many years. Training technology is used to improve the efficiency and effectiveness of military training and, in some cases, to provide training which cannot be provided in any other way. The term "training technology" is used here to encompass methods to structure training courses and the use of hardware, such as computers or simulated equipment for instruction.

Training Technology in Structuring Courses. Each Service uses Instructional Systems Development (ISD) to determine what should be taught in a given course and the most effective and efficient way of conducting the instruction. Tasks which can most effectively be taught in a formal training setting become the basis of the course; those which can be effectively learned on the job are taught in the operational unit. The course is then structured to teach the essential tasks in the most effective and efficient way. Through application of ISD to initial skill training courses, the Air Force has reduced average course lengths by 30% since 1970 and 16% since 1976.

Air Force initiatives include:

- o reduction of over 75 electronics related courses since FY 1976 through reductions in the electronic fundamentals and principles portions of the courses. Only those electronic fundamentals actually required for job performance were retained. Manpower savings from this initiative have allowed the Air Force to shift over 1500 spaces from training. These savings were included in the FY 78 budget.

- o reduction in resident school training for aircraft mechanics (crew chiefs) by five to eight weeks by shifting the system specific portions of the training to field training detachments. Field implementation of this effort is estimated to allow over 550 manpower spaces to be shifted from training to other areas to improve Air Force readiness. These savings were included in the FY 79 budget.

- o reductions in course lengths through workshop conferences between the Air Staff, Air Training Command, major commands, training centers, and others to review course contents versus user requirements. Thirty-two career ladders have been scrubbed with a projected FY 1979 savings of 20% in those courses. Although this procedure will be applied to additional courses, savings will be of much smaller magnitude in future years because most of the high student load courses have been completed.

In the Army, use of ISD to develop One-Station Unit Training has resulted in training time reductions of one to four weeks per MOS and a savings of 3,177 trainee manyears annually, or roughly a savings of one brigade in the field.

The Navy is establishing special Instructional Program Development (IPD) centers to implement ISD throughout the Naval Education and Training Command. Two of the five planned centers have been established; establishment of the remaining centers is planned over the next three years.

Use of Training Equipment. The Services are making increased use of computers as means of improving instruction and reducing costs. The Air Force will complete its service test on the Advanced Instructional System (AIS) by the end of FY 1978. The Advanced Instructional System is a prototype computer-based multi-media system for the administration and management of student training, and is being evaluated in four specialized technical training courses. To date it has shown significant reductions in training time.

The use of modern, highly capable flight simulators is increasing in undergraduate flight training and elsewhere in the Services. The FY 1979 budget includes a total of approximately $295 million for procurement of new flight simulators and modifications and repair parts for existing simulators which will result in reduced flying hour costs.

Other modern simulators are being used, or introduced, to support training courses other than flying courses. Navy expects its Device 19E22, 1200 PSI Propulsion Plant Trainer to be ready for training use in February 1978 at the surface warfare officer school. The trainer is a full scale operational mock-up of equipment in the engine room, fire room, auxillary machine room and electrical control room for FF-1052 (frigate) class ships. Equipments directly related to steam generation, propulsion, and electrical generation will be operable with computer indicators; inoperable mock-ups of other equipments will be provided. Capabilities and readings, indicators, sounds and visual effects will be simulated under control of an instructor who sets initial conditions, introduces malfunctions, controls casualties and monitors students' performance.

The first phase of the Naval Electronic Warfare Training System (NEWTS) is planned for FY 1980. This generalized basic trainer consists of 30 student stations, instructor/operator stations and a data storage and retrieval computational system. Student stations have generalized displays and controls for operation in a simulated electromagnetic environment which will prepare officer and enlisted students to adapt to the specific surface, subsurface or air weapon system platform to which they will be assigned.

Application of Training Technology in the Field Units. Although the training establishment exists primarily for the support of individual training programs, certain innovations initiated within the training establishment have important benefits in crew and unit training in the field. Unit training benefits the individual in increasing his proficiency as well as making him a more effective member of the unit.

Army is using various engagement simulation devices to train under conditions more nearly approaching combat than anything before available. To teach battle skills to infantry units, an engagement simulation system based upon low power lasers and microcomputers has been developed. Training units are furnished with rifles, machine guns, tank and antitank weapons that are equipped with eye-safe lasers. Sensors, connected to a microcomputer carried by each man or weapon, are mounted on each infantryman, vehicle, and weapon. When a weapon is "fired" a blank round is fired from the weapon and a light beam containing a distinctive code is emitted from the laser. Any sensor that detects the beam records a "kill" if the sensor is located in an area where a hit from that kind of weapon would normally disable the target. The computer signals the soldier when he has been hit and automatically disables his weapon, removing him from the exercise. Operational testing of the laser engagement begins in August 1978. Initial operational capability is scheduled for June 1980 in the United States Army, Europe. These and other simulators not only make possible improved combat readiness, but they also possess the potential for cost savings through reduced ammunition expenditures.

Army is developing better tools for judging individual proficiency in the field. These tools are new soldiers manuals and skill qualification tests which specify in advance the critical skills required of a soldier in a particular MOS and provide precise standards against which to measure these skills. Army is supplying training extension courses to active and reserve units for training of individuals in these units. Training extension courses can also be used to help prepare individuals for the skill qualification tests. Army is also developing similar techniques for unit training evaluation, the Army Training and Evaluation Program, ARTEP. The ARTEP provides commanders a document from which to prepare, conduct, and evaluate unit training. In the ARTEP precise, quantifiable goals are specified to permit accurate evaluation.

The Department of Defense will continue to take advantage of available and emerging training technology from these initiatives and from other training research and development activities to improve the quality of training and to reduce training time and costs.

APPENDICES

APPENDIX A

RECONCILIATION OF THE MILITARY MANPOWER TRAINING REPORT WITH OTHER TRAINING DATA

In prior years, this Appendix has provided a trail of specific definitional differences among the various budget documents and the Military Manpower Training Report. Chapter I of the present Report states that, "As a result of the 1977 restructuring of the training-related portions of the Five-Year Defense Program, the variations found in previous years have been largely eliminated." Significant remaining variations are discussed in the appropriate chapters of this Report.

The relationship of this Report to the Defense Manpower Requirements Report is discussed in Chapter IX.

This Report is compatible with the FY 1979 budget justification data, as revised, provided to the Congress by the Military Services as discussed in Chapter X.

APPENDIX B

DETERMINING TRAINING REQUIREMENTS

Discussions of the determination of training requirements in this report reflect a generally uniform approach. The following overview of the methodology for assessing and calculating training requirements is provided as a framework for understanding this approach. As noted, details in calculation may differ to some extent among the Services and among the training categories.

Requirements

All training is accomplished to satisfy the need for personnel with certain types and levels of skills to man the approved or projected force. The Services, over the years, have developed detailed, systematic methods of determining the manpower needed to man and support the forces. The Manpower Requirements Report discusses this process. From these force requirements for manpower, the need for trained personnel with specific skills can then be derived. For example, a given force structure establishes the number of trained enlisted personnel needed. The number of authorized positions within that force structure for radar technicians establishes the basic requirement for trained personnel with that skill. This process is reiterated on a phased basis for all skills and skill levels for each Service, for both officer and enlisted skills. The total of all personnel in all skills needed to perform all the jobs in the force at a point in time represents the total requirement for trained manpower projected for that date.

Inventory Projections

The requirements identified through this process must be measured against the available assets, in terms of trained personnel on hand in each skill and skill level. From this asset base, estimates are made of how many trained personnel will be available at various points of time in the future. These estimates take into account probable rates of change to the current inventory -- through reenlistment, promotion, discharge, death, retirement, or other causes. These estimates are based on the best historical information available, tempered by judgment of how in the future personnel policies, the state of the economy, behavioral patterns, and other factors, many of them difficult to predict, will affect the probabilities that a trained individual will remain in the Service. A comparison of skill requirements and skill inventory projections, over time, establishes the extent of shortage or surplus likely to exist in each skill area by month and year. Adjusting the inventory may entail retraining personnel who are in surplus skills, but to a much greater degree, adjustment is likely to require the training of new accessions at entry level in shortage skill areas. The process

places a demand on the personnel management and training establishments continually to analyze information about attrition as it occurs, by skill and skill level, in order to produce the right number of trained personnel with the proper skills needed to restore and maintain the balance of the skill inventory. The workload thus placed on the training establishment is detailed by graduates needed from courses of various lengths and is measured in terms of average student load, or "training load."

Average Training Loads

Resources (men, money, and materiel) needed for any particular category of training vary with the number of students undergoing training at any given time. Facilities must be constructed and maintained to accommodate these students in training. The training establishment must maintain a sufficient staff of qualified instructors to conduct instruction for the "load" of students. Students and Trainees, as described in the "Individuals" chapter of the Manpower Requirements Report, must be programmed to account for the fact that these personnel are in formal school training and are not available for duty with operational units. All of these personnel must be paid, housed, and supported. The basis for establishing these resource requirements is the "average training load."

The aggregate training load of courses of instruction within a given training category or sub-category for a given period is computed in accordance with the the following formula, except as noted:

$$L = \frac{\sum_{i=1}^{n} \left(\frac{E_i + G_i}{2} \right) t_i}{y}$$

where L is Average Training Load,

i is a class (1,2,...n) scheduled for a training course within the training category under consideration,

E is number of expected entrants to scheduled class i,

G is number of expected graduates from scheduled class i,

t is the calendar length of the syllabus of class i, and

y is the length of a calendar year expressed in the same units as t (1 year = 12 months = 52 weeks = 365 days).

Fractions of carryover classes conducted during the year are included as though they were separate classes. However, individuals remaining in class at the end of a period are not counted as graduates, nor are individuals already in a class at the beginning of a period counted as entrants except for purposes of computing training loads for these fractions of courses.

The training load for a category or sub-category of training (e.g., Specialized Skill Training or Functional Training within that category) is the sum of the loads computed for all classes of courses within the category or sub-category.

This method of computation implies "straight-line" attrition, under an assumption that net class attrition occurs at a constant rate during a course. In the relatively few cases when attrition patterns experienced characteristically produce a significantly different distribution of attrition, the more appropriate attrition pattern is used in lieu of the term $\frac{E + G}{2}$.

Since attrition varies for different training programs and is not always spread uniformly throughout the length of a course of training, determining training loads becomes a complex problem in estimation. This process of estimation involves two related factors.

First, across the spectrum of training programs that are within the scope of this report, attrition varies from nearly zero to as high as 25 to 30 percent. Most officer Professional Development Education programs have practically no attrition. For FY 1979, the Services estimate that about 10 percent of new recruits, on a DoD average basis, will not complete Recruit Training because they will be found, in the course of undergoing training, not to have the mental or physical qualifications, or the motivation, for military life. Of these, some will fall ill or go absent without leave. Attrition rates in Specialized Skill Training vary widely, with the longer and more demanding courses tending to have higher losses. Pilot training is near the top of the scale in attrition; the higher rate of losses is based on lack of aptitude or motivation for flying, accidents, and similar causes which are intensified in this type of training. While historical data provide a basis for projecting attrition rates for all types of training, there is a considerable possibility for error based on variance in such factors as student quality and motivation.

A second necessary step in evaluating the effect of attrition is to estimate the phasing of attrition for each training program. In some courses, attrition tends to be higher in the early stages of a course when the inept and those lacking motivation are discovered. In other courses, the bulk of attrition may occur toward the end of the course. The patterns of losses vary widely among types of training and, to the detriment of precise planning, over time. The complexities of the

attrition variable makes it necessary for the Services to use computer simulations in their training load calculations which take into account the rates and time-phasing of attrition.

An additional variation is introduced into the conceptual process of forecasting requirements and planning training loads as described above by the seasonal and cyclical nature of new accessions to the Services. Inputs to many of the more stable training programs -- Professional Development Education, Flight Training, the Service Academies, and the most advanced portions of Specialized Skill Training -- are readily predictable. Inputs to the training programs which are dependent on new accessions, Recruit Training and Initial Skill Training for graduates of Recruit Training, are considerably more volatile. The volume of inputs to these types of training depends on such intangibles as job opportunities in the civilian economy and the decisions of young people to enlist, delay enlisting, or not enlist. Moreover, enlistments are seasonal in nature, following a long-term pattern of "good" and "bad" recruiting months, whereas phased requirements may move independently of these seasonal patterns. As a result, training loads for the initial active duty training programs are generally based on a compromise involving the timing of predicted enlistments and the capacity of the training base as well as when the new personnel are needed to fill vacancies in the job structure. Most of the courses in these programs are relatively short, and program adjustments can readily be made.

APPENDIX C

INDIVIDUAL TRAINING FACILITIES BY LOCATION
AND MAJOR TRAINING CATEGORY, FY 1979

Facility Location	Estimated Student Load	Estimated Training Support Military	Estimated Training Support Civilian
A. Recruit Training			
Army a/			
Fort Bliss, TX			
Fort Dix, NJ			
Fort Jackson, SC			
Fort Knox, KY			
Fort Leonard Wood, MO			
Fort McClellan, AL			
Fort Sill, OK			
Navy			
Great Lakes, IL	4,426	477	8
Orlando, FL	4,180	390	-
San Diego, CA	3,689	359	14
Marine Corps			
Parris Island, SC	5,330	2,039	496
San Diego, CA	5,364	1,772	258
Air Force			
Lackland Air Force Base, TX	9,876	1,388	336

a/ Final FY 1979 Army distributions of Recruit and Specialized Skill (including OSUT) student loads and training support manpower not yet available in base level detail.

Facility Location	Estimated Student Load	Estimated Training Support	
		Military	Civilian
B. Officer Acquisition Training			
Army			
Fort Benning, GA	259	42	23
Fort Monmouth, NJ	260	46	22
West Point, NY	4,161	1,461	2,535
Navy			
Annapolis, MD	4,245	742	1,681
Newport, RI	605	88	16
Pensacola, FL	69	73	-
Marine Corps			
Quantico, VA	478	379	107
Air Force			
Colorado Springs, CO	4,499	1,847	1,554
Lackland Air Force Base, TX	748	213	58

Facility Location	Estimated Student Load	Estimated Training Support	
		Military	Civilian

C. Specialized Skill Training

Army a/

Aberdeen Proving Ground, MD
Charlottesville, Va
Fort Belvoir, VA
Fort Benning, GA
Fort B. Harrison, IN
Fort Bliss, TX
Fort Bragg, NC
Fort Devens, MA
Fort Dix, NJ
Fort Eustis, VA
Fort Gordon, GA
Fort Huachuca, AZ
Fort Jackson, SC
Fort Knox, KY
Fort Lee, VA
Fort L. Wood, MO
Fort McClellan, AL
Fort Rucker, AL
Fort Sam Houston, TX
Fort Sill, OK
Fort Wadsworth, NY
Monterey, CA
Redstone Arsenal, AL
Rock Island, IL
Savanna Army Depot, IL
Texarkana, TX

a/ Final FY 1979 Army distributions of Recruit and Specialized Skill (including OSUT) student loads and training support manpower not yet available in base level detail.

Facility Location	Estimated Student Load	Estimated Training Support Military	Civilian
Navy			
Athens, GA	271	210	17
Bangor, WA	109	245	0
Bethesda, MD	195	43	2
Charleston, SC	647	358	19
Corry Station, FL	1,482	654	633
Dam Neck, VA	1,691	1,197	73
Great Lakes, IL	6,807	1,566	108
Groton, CN	89	15	2
Gulfport, MS	304	182	13
Idaho Falls, ID	747	540	-
Indian Head, MD	253	100	8
Jacksonville, FL	516	509	15
Little Creek, VA	733	142	22
Mare Island, CA	958	428	38
Memphis, TN	6,327	1,041	201
Meridian, MS	731	142	18
Moffett Field, CA	193	89	1
New London, CT	2,090	841	50
Newport, RI	564	246	41
Norfolk, VA	1,099	526	39
Oakland, CA	114	23	9
Oceana, VA	271	170	0
Orlando, FL	4,844	539	19
Pearl Harbor, HI	479	417	26
Pensacola, FL	72	88	31
Philadelphia, PA	267	70	8
Port Hueneme, CA	102	63	32
Portsmouth, VA	246	50	2
San Diego, CA	8,174	2,509	268
Schenectady, NY	1,023	860	28
Windsor, CT	286	150	-
Washington, D.C.	31	78	8
Whidbey Island, WA	220	121	0

Facility Location	Estimated Student Load	Estimated Training Support	
		Military	Civilian
Marine Corps			
Albany, GA	55	30	-
Camp Lejeune, NC	2,014	653	26
Camp Pendleton, CA	1,733	461	7
Coronado, CA	50	22	2
Little Creek, VA	25	11	3
Parris Island, SC	411	77	75
Quantico, VA	1,293	1,865	630
San Diego, CA	351	85	14
Twentynine Palms, CA	1,494	508	52
Air Force			
Chanute Air Force Base, IL	4,818	2,321	1,089
Fairchild Air Force Base, WA	130	306	24
Goodfellow Air Force Base, TX	672	846	231
Homestead Air Force Base, FL	39	132	1
Keesler Air Force Base, MS	6,089	4,050	1,903
Lackland Air Force Base, TX	4,721	1,924	1,136
Lowry Air Force Base, CO	4,473	2,500	1,118
Sheppard Air Force Base, TX	5,090	2,732	1,422

Facility Location	Estimated Student Load	Estimated Training Support	
		Military	Civilian
D. Flight Training			
Army			
Fort Rucker, AL	1,339	1,157	629
Navy			
Chase Field, TX	154	1,182	135
Corpus Christi, TX	223	819	75
Kingsville, TX	174	1,293	110
Meridian, MS	104	907	63
Pensacola, FL	273	1,629	176
Whiting Field, FL	612	1,201	56
Air Force			
Columbus Air Force Base, MS	338	1,869	422
Lackland Air Force Base, TX	72	33	3
Laughlin Air Force Base, TX	364	1,970	433
Mather Air Force Base, CA	762	1,773	632
Randolph Air Force Base, TX	195	1,333	663
Reese Air Force Base, TX	343	1,736	571
Sheppard Air Force Base, TX	230	424	54
Vance Air Force Base, OK	333	755	180
Williams Air Force Base, AZ	369	1,979	603

Facility Location	Estimated Student Load	Estimated Training Support Military	Civilian
E. Professional Development Education			
Army			
Carlisle Barracks, PA	220	111	221
Fort Belvoir, VA	144	76	110
Fort Bliss, TX	210	125	63
Fort Leavenworth, KA	807	235	268
Fort McNair, DC	322	91	181
Navy			
Monterey, CA	1,166	83	308
Newport, RI	408	171	200
Norfolk, VA	260	18	65
Marine Corps			
Quantico, VA	465	424	211
Air Force			
Gunter Air Force Station, AL	208	106	28
Maxwell Air Force Base, AL	1,569	776	389
Wright-Patterson Air Force Base, OH	828	279	276

APPENDIX D

SUMMARY OF TOTAL FUNDING FOR INDIVIDUAL TRAINING AND EDUCATION, BY SERVICE AND APPROPRIATION, FY 1977-79
($ millions)

FUNDING RELATED TO MILITARY STUDENT TRAINING LOADS

Appropriation	FY 77	FY 78	FY 79
	Army		
Operations and Maintenance	$ 626.9	$ 600.2	$ 644.9
Military Personnel	1,278.5	1,302.3	1,234.1
Reserve Personnel	55.6	67.2	62.4
National Guard Personnel	141.0	148.9	136.0
Aircraft Procurement	1.5	19.4	45.0
Missile Procurement	4.5	4.8	2.1
Procurement Weapons and Tracked Combat Vehicles	16.3	19.1	47.3
Procurement of Ammunition	1.5	4.4	71.6
Other Procurement	34.0	31.0	52.6
Military Construction	4.1	26.9	29.9
Total Army	$2,163.8	$2,224.1	$2.325.9

Note: See notes on subsequent pages of this Appendix.

Appropriation	FY 77	FY 78	FY 79
	Navy*		
Operations and Maintenance	$ 358.4	$ 386.2	$ 412.3
Military Personnel	1,061.7	1,161.4	1,094.5
Reserve Personnel	17.2	19.5	20.7
Aircraft Procurement	29.7	38.7	5.1
Other Procurement	9.4	35.2	45.0
Military Construction	39.2	3.4	63.2
Total Navy	$1,515.4	$1,644.2	$1,641.3
	Marine Corps *		
Operations and Maintenance	$ 71.7	74.7	85.3
Military Personnel	293.3	308.0	299.4
Reserve Personnel	22.4	30.8	28.3
Procurement	9.7	16.1	5.9
Total Marine Corps	$ 397.1	$ 429.6	$ 418.9

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* These figures reflect funding practices within the Department of Navy (e.g., Navy funds for aviation fuel used by the Marine Corps as well as for that used by Navy). Thus, Service figures may not always be relatable to training activities of the respective Service, although the Service totals taken together relate to the total Department of Navy individual training and education loads.

Appropriation	FY 77	FY 78	FY 79
	Air Force		
Operations and Maintenance	$ 585.0	$ 583.0	$ 613.2
Military Personnel	862.9	888.5	881.0
Reserve Personnel	11.7	13.6	13.6
National Guard Personnel	22.6	23.1	26.7
Aircraft Procurement	11.3	10.5	11.6
Other Procurement	a/	a/	a/
Military Construction	9.3	3.4	b/
Total Air Force	$1,503.3	$1,522.7	$1,546.7
Total Department of Defense	$5,579.6	$5,820.6	$5,932.8

a/ Less than $500,000.

b/ No training-attributable funding.

Note: Totals may not add due to rounding. These totals exclude funding for individual education and training programs for which loads are not requested and for which funds were not shown in the funding tables in Chapter X (e.g., ROTC).

APPENDIX E

DISPLAY OF FY 1979 DATA ON CERTAIN MEASURES OF EFFICIENCY AS REQUESTED BY A COMMITTEE OF THE CONGRESS

In its report on the Department of Defense Appropriations Authorization Bill for 1978 the Committee on Armed Services of the United States Senate requested that, among other things, the Military Manpower Training Report for FY 1979 provide data on cost per graduate and cost per student manyear. The purpose of this Appendix is to comply with that request.

The Department of Defense provided in an addendum to the Military Manpower Training Report for FY 1978, transmitted to the Congress in March, 1977, an extensive report on "Efficiency and Effectiveness of Military Training." This report addressed the usefulness and validity of both cost per graduate and cost per student manyear as efficiency measures as well as several other training management indicators:

-- student manyears per staff manyear;

-- actual workload versus programmed workloads;

-- skill mismatch; and

-- percent of the force in training.

Each of these approaches was discussed in terms of its strengths and weaknesses as a measure or indicator of relative training efficiency, with special stress on practical data problems.

It is well to repeat a general caution contained in the report last year:

> ...Because military training as a whole and even each major piece of military training (such as flight training or initial skill training) are made up of such a diverse set of courses, each with its own individual resource requirements, no single efficiency measure can serve as a yardstick for sizing or evaluating aggregations of training. Neither cost per graduate nor any other efficiency measure is transferable across different types of training -- military or civilian.

In this connection four special cautions were stated.

-- "Cheaper is not always better."

-- Reliance on cost per graduate as a measure of efficiency places pressure on trainers to reduce attrition which might lead to the graduation of students who do not meet course standards.

-- Cost per graduate is useful only for assessing trends in a single course or a limited group of similar courses. It is "...potentially misleading when applied to aggregations of heterogeneous courses."

-- Cost data must be comparable. Currently available Defense Training cost data are not necessarily complete and consistent among courses or among the Services.

These cautions still apply.

Cost per Graduate

Providing cost per graduate information as requested by the Committee offers an illustration of the complexity of relative costs per graduate among the different types of training programs of the Military Services. The table which follows presents aggregative average cost per graduate information for the major categories of training conducted, detailed by Military Service. These averages are easily calculated by dividing the funding shown on page X-4 for each category of training and Service by the approximate estimated numbers of course graduates shown in the next following table for each category and Service. Student pay and allowances are included in the funding; attention is invited to the comments on page X-4 regarding inclusion of student pay and allowances.

Aggregate Average Costs per Course Graduate by Major Category of Training and Service, FY 1979
($ Thousands)

	ARMY	NAVY	USMC	USAF
Recruit	2.9	2.0	3.2	1.6
Officer Acquisition	62.0	20.0	7.4	33.0
Specialized Skill	4.4	1.4	4.9	3.1
Flight	87.0	157.0	-	92.0
Professional Development Education	15.0	6.8	12.9	6.4
One-Station Unit	3.1	-	-	-
TOTAL	4.9	2.1	4.3	4.8

Number of Course Graduates by
Major Category of Training and Service, FY 1979
(000)

	ARMY	NAVY	USMC	Air Force
Recruit	102.0	76.0	47.0	75.0
Officer Acquisition	2.1	3.3	2.7	3.9
Specialized Skill	258.0	688.0	41.0	212.0
Flight	3.5	1.9	-	5.3
Professional Development Education	9.3	12.0	2.1	25.0
One-Station Unit Training	100.0	-	-	-
Total	474.9	781.2	92.8	321.2

To illustrate the difficulty and complexity of utilizing the average costs per graduate in the table on the preceeding page for inter-Service and intercategory comparisons, it may be helpful to briefly examine these costs.

Variations among Recruit Training costs should be expected because of differences in the relative length and weapon content of training. In Officer Acquisition training (ROTC costs are excluded as not load related as explained in Chapter IX) the low Marine Corps costs do not include the operation of a Service Academy. In Specialized Skill training the Navy data reflect inclusion of short Apprenticeship Training courses as well as a large number of short courses (e.g., damage control) which are conducted without heavy basing costs to the training estabishment by having students quartered aboard their in-port ships while enrolled in the course. In Flight Training, the Marine Corps conducts no undergraduate flight training; the Navy costs are influenced by the need to provide carrier qualification training to students; and the Army costs involve heavy ammunition procurement costs (some $70 million) for advanced flight training (conducted by the other Services in the operating forces) as well as extraordinary investment costs. The Professional Development Education costs per graduate also reflect differences in program composition, in particular the use by the Navy and Air Force of short refresher and seminar-type courses. And Army's One-Station Unit Training (a mix of Recruit and Specialized training in a single course) reflects economies from its method of

operation. As this brief discussion suggests, the use of average cost per graduate for inter-Service comparison is of very little use at this gross level of aggregation. Cost per graduate data should only be used in comparing similar courses or aggregations of training.

Cost per Student Manyear

Cost per student manyear also has been suggested as an efficiency measure in training. Student manyear, however, is not a final output of the training establishment; thus use of cost per student manyear as an efficiency measure is limited to training support activities such as billeting, messing, or health care where for certain purposes average student load (or manyears) may be a reasonable surrogate output measure. The following table of average costs per student year of training has been calculated simply by dividing the funding entries shown in the table on page X-4 by the corresponding estimated workloads shown on page IX-2.

Aggregate Average Costs per Student Year of Training by Major Category of Training and Service, FY 1979
($ Thousands)

	ARMY	NAVY	USMC	Air Force
Recruit	19	12	14	12
Officer Acquisition	29	25	40	25
Specialized Skill	26	22	41	22
Flight	254	150	-	148
Professional Development Education	78	35	54	42
One-Station Unit Training	14	-	-	-
Total	26	24	22	30

The costs in the table above are subject to the cautions stated for cost per graduate data plus some additional ones. The average costs per student year of training cannot reflect economies from reducing course lengths. This distortion arises because, as already noted, student load or workload are poor substitutes for output of graduates. This type of distortion is notable in Officer Acquisition Training where the Marine costs appear higher on a load basis but in fact are much lower than the other Services on a per graduate basis. And in Flight Army costs reflect the influence of the Army's inclusion here of short advanced flight training courses with costly ammunition use; in addition,

essentially all Army flight training is for pilots, whereas the Air Force and the Navy conduct navigator/Naval Flight Officer training, respectively, which is considerably less costly than the conduct of pilot training. The relatively high Army Professional Development Education costs reflect inclusion of Army's resident-nonresident loads for resident portions only. And the relatively lower cost of OSUT compared with Recruit or Specialized Skill training reflects, among other things, an efficient facility utilization for this still-enlarging program.

These examples help to illustrate some of the pitfalls in use of these measures. Nevertheless, these and other factored relationships, considered together, can serve to assist the identification of possible opportunities for innovations that merit further study and consideration.

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